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THE PANAMA CANAL RECORD

PUBLISHED WEEKLY UNDER
THE AUTHORITY AND SUPER-
VISION OF THE PANAMA CANAL

REMOTE STORAGE

AUGUST 17, 1921. TO AUGUST 9, 1922

VOLUME XV

WITH INDEX

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BALBOA HEIGHTS, CANAL ZONE
1922

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Commercial Traffic Passing Through the Panama Canal During the First Seven Years of its Operation.

The Panama Canal completed seven years of operation at the close of business on August 14, 1921, having been opened to commerce on August 15, 1914. During the seven years of operation the total number of commercial vessels which made the transit through the Canal was 13,416. The aggregate net tonnage of these vessels, according to the rules of measurement of The Panama Canal, was 45,869,942. The cargo which they carried totaled 51,578,920 tons of 2,240 pounds.

The foregoing traffic was made up of 6,388 vessels, of 21,933,325 net tons, carrying 22,215,402 tons of cargo, from the Atlantic to the Pacific, and 7,028 vessels, of 23,936,617 net tons, carrying 29,363,518 tons of cargo, from the Pacific to the Atlantic.

Oil Tanker Carries Whole Cargo of Wheat.

The oil tanker *Swiftwind*, operated by C. D. Mallory & Co., is being used for the carriage of grain in bulk. The *Swiftwind* passed through the Canal on August 10 on her maiden voyage, laden with 10,034 tons of wheat, shipped from Portland, via San Francisco, to Spezia, Italy, via Norfolk.

The vessel is of 8,207 tons gross and 5,092 tons net register, 465 feet in length by 60 feet beam, and was drawing 25 feet of water at time of transit. Her cargo of 10,034 tons was in the proportion of 1.97 tons, or approximately 71 bushels per net ton of cargo space. The space of 71 bushels is about 76 cubic feet. As the net ton contains 100 cubic feet, the cargo space was approximately 76 per cent, or three-fourths, filled.

From the Mountains of Virginia Through the Panama Canal.

A Canal employee, recently returned from a vacation spent in the United States, has written to THE PANAMA CANAL RECORD:

I visited a town in the upper reaches of the Shenandoah Valley of Virginia. A rural town. Primarily the trading center for one of the rich farming counties of "the granary of the South."

The town has a tannery, two flour mills, and the incubator factory. This last is an old sash and door factory, adapted to the manufacture of giant incubators. Giant incubators are used for the hatching, in 9,000 and 12,000 batches, of the day-old chicks that are now shipped all over the country by parcels post and retailed in the 5 and 10-cent stores.

On the platform of the incubator factory was a "unit," crated and addressed for shipment. Addressed to a firm in Los Angeles, Cal., by way of Baltimore and the Panama Canal.

Obviously it was remarked that the world is a small place, after all. And I reflected that the Canal's good uses are penetrating into our "hinterland."

The president of the company told me they have an order for New Zealand, which will also go by way of the Canal. He says the rate to California is about half the all-rail rate.

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, August 13, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
San Silvestre.	7	6 54	7	8 15	7	15 32	7	18 00	British.	Eagle Oil Transportation Co.	430 0	54 0	26 6	Tampico.	Valparaiso.	Fuel oil.	7,718	6,588	4,546
Retro Maru.	7	7 40	7	8 25	7	16 24	7	17 30	Japanese.	Toyo Kisen Kaisha	400 0	53 0	25 0	New York.	Kobe.	Cotton, general.	7,168	6,310	4,398
Gaelic Prince.	8	26	7	13 33	7	20 50	7	21 50	Japanese.	Prince Line Ltd.	476 0	57 0	28 0	New York.	Tokyo, P.I.	General.	9,869	9,160	6,671
West Catanaeze	8	3 25	8	6 48	8	13 40	8	18 20	American.	Elder Steamship Co.	410 0	54 0	25 0	New York.	San Diego.	Coal.	7,467	6,367	4,917
Point Adams.	8	9 39	8	11 48	8	18 10	8	19 05	American.	Pacific Mail Steamship Co.	369 0	54 0	17 2	Baltimore.	San Francisco.	General.	1,840	2,899	1,971
Jamaica.	8	4 47	8	6 07	8	14 55	8	19 30	British.	The Lakeshire Navigation Co.	230 0	55 0	14 6	Baltimore.	Buenaventura.	Salt, general.	1,790	1,187	822
Kentia Castle.	8	14 40	9	6 22	9	14 04	9	15 00	British.	The Lakeshire Navigation Co.	418 0	55 0	23 4	New Orleans.	Manila.	Cotton, general.	4,968	6,773	4,973
Lake Floris	8	23 15	9	6 22	9	13 01	9	17 45	American.	New Orleans & S. A. Line (S.B.).	251 0	43 0	18 6	New Orleans.	Guayaquil.	General.	1,329	2,857	1,783
Cleveland ¹ .	9	7 59	9	8 15	9	15 10			American.	United States Navy	292 0	44 0	17 0	New Orleans.	Balboa.	Steel, general.	762	18,234	10,405
Buckeye State.	9	11 21	9	12 49	9	18 56	12	7 51	American.	Mason Navigation Co. (S.B.).	518 0	72 0	23 0	Baltimore.	Honolulu.	General.	1,354	5,957	4,325
Rio Guita ² .	9	11 41	9	12 15	9	14 28			Panaman.	A. R. Eckert	360 0	52 0	21 8	Cristobal.	Gatun Lake.	General.	8,000	7,340	5,384
Santa Elisa.	9	15 52	10	6 08	10	12 52	10	17 55	American.	Grace Steamship Co.	435 0	63 0	27 0	New York.	Auckland.	General.	2,728	8,219	5,824
Corwall.	9	18 41	10	6 50	10	13 32	10	14 50	British.	Federal Steam Navigation Co.	420 0	54 0	26 9	Newport News.	Yokohama.	Kerosene, gen.	392	3,013	1,574
Sagadahoc.	9	18 41	10	6 50	10	14 52	10	19 30	American.	Green Star Steamship Corp.	420 0	54 0	26 9	New York.	San Francisco.	General.	5,396	7,118	5,196
Kingfisher ³ .	9	14 15	10	7 00	10	17 32	13	6 49	American.	United States Navy	187 0	55 0	14 0	Cristobal.	Balboa.	General.	1,560	3,429	2,206
Port Lyttleton.	10	5 30	10	7 15	10	15 00	10	16 05	British.	Commonwealth and Dom. Line.	430 0	55 0	24 0	London.	Buenaventura.	General.	(⁴)	6,380	4,856
General H. F.																			
Hodges.	7	6 14	10	8 30	10	15 37	11	2 18	American.	Panama Railroad Steamship Line	335 0	39 0	14 6	New York.	Buenaventura.	General.	6,536	7,496	5,686
Grace Dollar.	7	7 05	10	9 30	10	17 26	10	18 40	British.	Dollar Steamship Line.	412 0	57 0	23 0	Galveston.	Yokohama.	General.	3,000	7,091	5,054
Cuba.	6	14 45	10	11 45	10	18 12	11	7 53	American.	Pacific Mail Steamship Co.	300 0	42 0	22 6	Cristobal.	San Francisco.	General.	4,342	8,786	6,074
Jalapa.	10	13 30	10	14 00	10	20 40	11	4 09	American.	Frank Watchhouse & Co. (S.B.).	402 0	53 0	15 0	New Orleans.	Seattle.	Ballast.	(⁵)	7,658	5,372
Habira.	7	6 31	11	6 20	11	16 47			American.	Colombus Shipping Co. (S.B.).	435 0	56 0	18 7	New Orleans.	Balboa.	Fuel oil.	8,898	6,334	
Astronomer.	11	6 00	11	6 50	11	17 43	11	18 39	British.	Harrison Steamship Line.	482 0	58 0	22 0	Liverpool.	Vancouver.	Ballast.	7,188		5,563
Nieto de Lar-rinaga.	11	6 09	11	7 00	11	18 34	11	21 00	British.	Lorringer and Co. Ltd.	439 0	56 0	18 0	Barry.	San Francisco.	Ballast.	6,536		5,086
Jadden.	11	6 32	11	7 10	11	19 30	12	7 51	American.	Barber Steamship Line (S. B.).	410 0	54 0	26 0	New York.	Kobe.	General.	3,000		5,054
Lowan.	11	8 22	11	9 10	11	20 10	11	21 10	American.	United American Line.	408 0	54 0	21 0	New York.	Los Angeles.	General.	4,342		6,074
Magellan.	11	11 09	11	11 30	11	21 18	11	22 32	British.	Pacific Steam Navigation Co.	461 0	59 0	27 0	Glasgow.	Valparaiso.	General.	2,840		2,091
Frederick.	11	6 03	11	11 55	11	20 17	11	21 19	American.	Luckenbach Steamship Line.	317 0	40 0	22 7	New Orleans.	Los Angeles.	General.	774		3,622
Lukenbach.	11	6 12	11	12 09	11	21 10	11	22 10	British.	F. & W. Risdon	396 0	49 0	18 9	Glasgow.	Colonel.	General.	2,830		2,298
Elder Branch.	11	6 12	11	12 09	11	21 10	11	22 10	British.	Kokusai Kaisha	305 0	44 0	20 0	New York.	Yokohama.	Cotton, steel.	3,421		5,317
Tazan Maru.	12	6 05	12	12 25	12	20 00	12	21 28	Japanese.	Kokusai Kaisha	410 0	55 0	24 8	Antwerp.	Valparaiso.	General.	1,294		9,089
Tongking ⁴ .	12	10 41	12	12 30	12	18 55	13	7 52	Danish.	Petries det Orskjoldsteke Co.	430 0	58 0	24 8	New York.	Valparaiso.	General.	3,809		5,117
Ebro.	12	12 29	13	6 07	13	13 00	13	15 49	British.	Pacific Steam Navigation Co.	362 0	52 0	17 0	Amsterdam.	Guayaquil.	General.	3,809		5,117
Helder.	12	23 30	13	6 10	13	15 07	14	7 31	Dutch.	Royal Dutch Nest India Mail.	410 0	52 0	17 0	New York.	Seattle.	General.	6,476		4,682
West Himrod.	13	9 37	13	9 55	13	16 20	13	22 00	American.	Amiral Line (S. B.).	410 0	52 0	17 0	New York.	Buenaventura.	Ballast.	90		132
Laura C. Hall ⁵ .	6	7 45	13	6 10	13	15 11	13	16 15	British.	Pacific Metals Corp.	81 0	25 0	9 0	Cristobal.	Buenaventura.	General.	7		72

¹ Cruiser.

² Launch.

³ Mineplanter.

⁴ Motorship.

⁵ Motor schooner.

⁶ Towing tugs No. 49 and No. 50.

⁷ 18,400 barrels.

THE PANAMA CANAL RECORD

3

THROUGH THE CANAL—PACIFIC TO ATLANTIC:

	6	23	10	7	7	25	7	13	45	14	14	05	British	Pacific Steam Navigation Co.	246.0	35.2	12.6	Guayaquil	Cristobal	General	275	1,582	1,449
Canada	6	23	10	7	8	40	7	16	05	7	23	30	British	Canadian Government	319.4	44.3	18.0	Vancouver	Montreal	Lumber, general	1,705	3,162	2,042
Voyager	6	23	10	7	8	50	8	13	40	8	16	27	American	Standard Oil Co.	401.2	53.1	19.6	Balboa	Tampico	Ballast	6,019	4,272	4,272
Glenpool	7	22	00	8	7	53	8	15	15	8	15	15	American	Barber Line (S. B.)	385.5	55.0	24.7	Hongkong	New York	General	6,904	6,842	4,758
Wytheville	7	22	00	8	7	53	8	15	15	8	15	15	French	French Line	410.7	55.0	24.7	Valparaiso	Liverpool	General	6,482	6,327	4,369
Montana	7	19	30	8	8	13	8	17	00	9	13	00	Spanish	Spanish Navy	439.6	55.0	24.7	Callao	Spain	General	10,696	8,063	
España	8	7	00	8	9	40	8	18	14	10	8	40	Spanish	Panama Railroad Steamship Line	439.5	55.0	24.7	Balboa	Norfolk	Ballast			
Cristobal	8	16	15	9	6	27	9	14	23	10	15	07	American	United States Government	187.0	35.2	14.0	San Pedro	Cristobal	General	10,000	11,486	8,732
Kingfisher	8	17	15	9	6	36	9	14	15				American	Lukenbach Steamship Line	416.0	35.2	25.0	Portland	Philadelphia	Sugar	9,000	7,245	5,132
Andrea F.	9	1	35	9	7	58	9	15	25	9	15	40	American	American Hawaiian Line	495.0	35.2	25.0	Kaunapali	Boston	General			
Lukenbach	9	4	30	9	9	10	18	9	18	35			American	Peter Olsen, Kristiania	425.5	55.3	28.6	San Francisco	United King	(1)	8,770	7,505	5,626
George	9	9	30	9	11	35	9	18	34	9	18	34	Norwegian	N. Atl. & West. S. S. Co. (S. B.)	404.6	54.2	19.6	Seattle	Baltimore	General	3,462	6,529	4,737
Washington	9	9	41	9	11	52	9	16	25	10	20	00	American	Swiftsure Oil Trans. Co. (S. B.)	404.6	54.2	19.6	Portland	Spezia, Italy	Wheat	10,034	8,473	5,997
Yalza	10	1	50	10	8	55	10	16	25	10	20	00	American	Kokusa Kisen Kaisha	385.0	51.0	26.0	Portland	Norfolk	Wheat	7,293	5,933	4,559
Swiftwind	10	14	15	10	15	01	11	13	22	11	14	05	Japanese	United States Navy	476.0	58.2	31.0	Balboa	Hampton Rds.	Ballast			
Raifuku Maru	10	13	01	11	7	01	11	13	22	11	14	05	American	New Zealand Shipping Co	490.0	58.2	31.0	Suckland	Southampton	(4)	4,557	9,057	6,438
Neches	10	14	30	11	6	58	11	16	05	11	18	00	British	United States Navy	554.0	93.2	31.0	San Diego	New York	General			
Kaikoura	10	14	30	11	6	58	11	16	05	11	18	00	American	United States Navy	554.0	93.2	31.0	San Diego	New York	General			
Arkansas	2	6	00	11	8	31	11	16	50	11	17	40	American	E. J. Hooper	29.0	9.0	25.0	Balboa	Grain Lake	General	8,975	8,514	6,066
Wyoming	2	6	00	11	9	14	11	17	40	11	17	40	American	Holland American Line	499.6	58.2	25.0	Vancouver	Hamburg	(5)	8,103	10,708	8,116
Affinity	11	19	30	12	8	25	12	16	15	12	20	40	Dutch	Commonwealth and Dom. Line	481.2	62.3	28.0	Sydney	London	Ballast	7,658	5,372	
Eemdjik	12	6	30	12	8	57	12	17	10	12	18	38	British	Colombus Steamship Co. (S. B.)	435.5	56.2	48.0	Balboa	Tecumate	Barley	5,009	3,890	2,853
Port Kembla	12	6	30	12	8	57	12	17	10	12	18	38	American	W. Wilhelmsen	334.0	44.0	22.0	San Francisco	Liswich	General	481	3,666	2,577
Habira	11	16	47	12	10	56	12	18	18	12	18	18	Norwegian	Chilean Line	350.0	42.1	19.0	Tacahuano	Cristobal	Port Limon			
Tancred	12	16	35	13	6	22	13	14	30	13	16	30	Chilean	United States Navy	256.0	33.0	17.0	Balboa	Cristobal	Cristobal			
Palena	13	3	30	13	7	06	13	14	52	13	17	42	American	United States Navy	292.0	44.0	17.0	Balboa	Cristobal	Cristobal			
Dolphin	13	14	15	13	8	06	13	16	05	13	16	05	American	United States Navy	292.0	44.0	17.0	Balboa	Cristobal	Cristobal			
Denver	13	14	15	13	8	29	13	16	05	13	16	05	American	Pacific Steam Navigation Co.	485.4	58.2	25.0	Valparaiso	Liverpool	(6)	4,072	9,936	6,561
Tascoma	13	14	15	13	8	29	13	16	05	13	16	05	American										
Orita	13	13	11	13	13	11	13	13	11	13	13	11	British										

* Battleship. ⁹ Mine sweeper. ¹⁰ Collier. ¹¹ Launch. ¹² Gunboat. ¹³ Barley, coffee, and general. ¹⁴ Frozen meat, general. ¹⁵ General, meat, cheese, wool, tallow, grain, etc.

¹⁶ Cotton, wool, barley, and oats.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
August 7.	Alliance.	Panama Railroad Steamship Line.	New York via Haiti.	August 7.	Camden.	United Fruit Co.	Tampico.
August 7.	Atenas	United Fruit Co.	New Orleans.	August 7.	Atenas	United Fruit Co.	Bocas del Toro.
August 8.	Martinique	French Steamship Co.	Hayre.	August 9.	Lucellum	H. E. Moss & Co.	Tampico.
August 8.	Cartago	United Fruit Co.	New Orleans.	August 10.	Atenas	United Fruit Co.	New Orleans.
August 8.	Ulua	United Fruit Co.	New York.	August 10.	Ulua	United Fruit Co.	New York via Port Limon.
August 9.	Lucellum	H. E. Moss & Co.	Guracao.	August 11.	Martinique.	French Steamship Line.	Puerto Colombia.

Continued on page 8, column 2

The "Renaico" to Sail for Norfolk and European Ports.

The steamship *Renaico* of the South American Steamship Co. (Chilean Line) is due to sail from Cristobal for Norfolk on August 18. She is on a voyage from Valparaíso to Norfolk, Havre, London, Antwerp, and Hamburg, carrying passengers and cargo. The *Renaico* has been plying between Valparaíso and New York, and the present voyage is in the expectation of developing better trade out of the European ports.

The company offers a reduced rate of \$70 for first-class transportation from Cristobal to Norfolk for employees of The Panama Canal and the Panama Railroad Company; to others the first-cabin rate is \$100. The *Renaico* is of 5,919 gross tons, 431 feet in length by 51 feet beam. She was built at Sunderland in 1898 and was formerly the *Nippon Maru*.

Trinidad Ships Sugar to Vancouver.

Two thousand tons of sugar for Vancouver, B. C., from Port of Spain, Trinidad, made up the cargo of the steamship *Canadian Traveller*, passing through the Canal on August 3.

Port of Spain is 1,159 nautical miles from the Atlantic end of the Canal, and Vancouver is 4,032 miles from the Pacific end.

Coal for Bunkering at San Juan, Porto Rico.

The Executive Secretary of the Government of Porto Rico advises that the port of San Juan, P. R., has on hand now approximately 6,500 tons of coal, available for bunkering vessels moving to or from the Canal. The price is not stated. He also reports that a local coal company has advised that it will add to its equipment in the near future a new barge of 1,000 tons capacity, "which will put them in position to bunker vessels at a rate of 300 tons of coal per hour."

San Juan is 993 nautical miles from Cristobal.

The "Olockson" Reported Sold.

The Shipping Board steamship *Olockson* is reported sold to D. J. Hanlon, in a recent issue of *Nauticus*. No price was stated.

The *Olockson* caught fire on March 13, 1920, beyond Cape Mala, after passing through the Canal. She was towed back to the outer harbor at Balboa by the tug *Gorgona*, and sunk in order to extinguish the fire. After the ship was raised and her cargo discharged, a survey led to the decision that she was not worth rebuilding. She was then towed to anchorage in the outer harbor and has been there since. No advice of her sale has been received by the Canal authorities.

Coal at St. Lucia.

The agent of the Royal Mail Steam Packet Company states that he has received cable advice from a coaling company at St. Lucia, B. W. I., to the effect that its stock of coal is 2,400 tons, the total stock in port being 8,500 tons. The price, effective August 1, is 77 shillings per ton.

Executive Order.—Authorizing the Requirement of Crew Lists.

Amending the provisions of the Executive Order of August 8, 1918, concerning travel between the United States and neighboring countries, and authorizing the requirement of crew lists.

By virtue of the authority vested in me by the Act of Congress approved the twenty-second day of May, one thousand, nine hundred and eighteen,² entitled, "An Act to Prevent in Time of War Departure From and Entry into the United

States Contrary to Public Safety," and with reference to the Presidential Proclamation and Executive Order of August eight, one thousand, nine hundred and eighteen, adopted in pursuance thereof, I hereby prescribe the following amendments to said Executive Order:

* * * * *

III—CREW LISTS.

1. Masters of vessels of all nationalities sailing for a port of the United States of America or of any of its possessions, except the Panama Canal Zone, must submit for visa a list of all of the alien members of the vessel's crew to the American consular officer at the port from which the vessel commences its voyage. If there is no American consular officer stationed at that port, the crew list should be submitted at the first port of call (if the vessel touches at any other port) where an American consular officer is located. This does not refer to consular agents, who are not authorized to visa crew lists.

2. When a vessel sails from a port where no American Consul is stationed, but which is within a few hours reach by mail of an American Consulate, so that unreasonable delay and serious loss would not result from referring the crew list to such Consulate, it should be referred thereto for visa.

3. If an alien seaman whose name is not included in a visaed crew list arrives at a port of the United States he shall not be allowed to land except upon the permission of the Secretary of State.

WARREN G. HARDING.

THE WHITE HOUSE,
June 25, 1921.

¹ Published as Panama Canal Circular No. 601-80.

² Published as Panama Canal Circular No. 600-49.

³ Published as Panama Canal Circular No. 601-79.

The Executive Order above, of June 25, 1921, has been published as Panama Canal Circular No. 601-123, dated August 10, 1921.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending August 13, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged.	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Salvador.....	Pacific Steam Navigation Co.....		August 14.....		6½
Lucellum.....	Anglo Saxon Petroleum Co.....		August 9.....		(²)
Cuba.....	Pacific Mail Steamship Co.....		August 10.....		42
Camden.....	United Fruit Co.....		August 8.....		(²)
Point Adams.....	Pacific Mail Steamship Co.....		August 8.....		288
Camito.....	United Fruit Co.....		August 6.....		24
Quilpue.....	Pacific Steam Navigation Co.....		August 7.....		1
General H. F. Hodges.....	Panama Railroad Steamship Line.....	August 7.....	August 10.....	504	42
Atenas.....	United Fruit Co.....	August 7.....	August 7.....	160	21
Allianca.....	Panama Railroad Steamship Line.....	August 7.....	August 13.....	1,442½	(²)
Hahaira.....	United States Shipping Board.....	August 7.....	August 11.....	8,066	(²)
Jamaica.....	Pacific Steam Navigation Co.....	August 7.....	August 9.....	151	137½
Cauca.....	Pacific Steam Navigation Co.....	August 7.....	August 7.....	274	½
Martinique.....	French Steamship Line.....	August 8.....	August 11.....	64	23
Cartago.....	United Fruit Co.....	August 8.....	August 11.....	1,723	90
Ulua.....	United Fruit Co.....	August 9.....	August 10.....	312	176
Atenas.....	United Fruit Co.....	August 10.....	August 10.....	(¹)	8
Santa Marta.....	United Fruit Co.....	August 10.....	August 11.....	66	248
Sixaloa.....	United Fruit Co.....	August 10.....	August 11.....	78	
Montevideo.....	Spanish Steamship Line.....	August 11.....	August 12.....	247	497
Ebro.....	Pacific Steam Navigation Co.....	August 12.....	August 13.....	98	(²)
Tongking.....	United Fruit Co.....	August 12.....	August 12.....	106	(²)
Helder.....	Royal Dutch West India Mail.....	August 12.....	August 13.....	311	(²)
Balboa.....	Panama Railroad Steamship Line.....	August 13.....		445	
San Bruno.....	United Fruit Co.....	August 13.....	August 13.....	53	½
Palena.....	United Fruit Co.....	August 13.....		480	
Abangarez.....	United Fruit Co.....	August 14.....	August 14.....	1½	
Essequibo.....	Pacific Steam Navigation Co.....	August 14.....	August 14.....	3	97½
Barima.....	Pacific Steam Navigation Co.....		August 14.....		½

¹ 175 pounds.

² No cargo laded.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Balboa for Week Ending August 13, 1921.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged.	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Glenpool.....	Standard Oil Co.....	August 7.....	August 8.....	7,000	
Cauca.....	Pacific Steam Navigation Co.....	August 7.....	August 7.....	8	
Buckeye State.....	United States Shipping Board.....	August 9.....	August 11.....		5
Jamaica.....	Pacific Steam Navigation Co.....	August 9.....	August 9.....		43
Cuba.....	Pacific Mail Steamship Co.....	August 10.....	August 10.....	27	32
Palena.....	Chilean Steamship Line.....	August 13.....	August 13.....	51	

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended August 13:

Steamships *Buckeye State*, roll tubes in one boiler; repair blower engine and feed pumps; *Hampton Roads*, repair blower engine and anchor; *Apus*, braze 4 patches on leaky copper deck exhaust expansion bend.

PREVIOUSLY REPORTED.

Steamship *Panama*, reboiling and general overhaul to machinery and hull; steamer *Gen. George W. Getty*, miscellaneous engineer's department and hull repairs; U. S. subchaser *V-12*, docking and general repairs to hull and machinery; tug *Coco Solo*, manufacture 3 eccentric rods for generators and electric weld back end of boilers; launches *P-1*, rebuilding of hull; *Pacific*, general repairs to hull; mine planter *Graham*, docking and miscellaneous repairs; steamship *Cristobal*, miscellaneous deck, steward's, and engineer's department repairs; dredge *Paraiso*, docking and hull repairs.

The following vessels were at the Cristobal shops for repairs during the week ended August 13:

Steamships *Advance*, *Achilles*, *Cristobal*, *Allianca*, and *Ulysses*, miscellaneous repairs and painting to engine, deck and steward departments; U. S. S. *Eagle No. 31*, dock and undock, clean and paint bottom, overhaul sea valves and zincs, repair 4 mud drum casings, build up holes for pins in planetary gear pins; turn small end of pin down $\frac{1}{8}$ " smaller than bearing, assemble reduction gear; unship old tail shaft, fit and install new, lining same up from reduction gear aft; steamship *Salvador*, cast and machine 2 inch cylinders as per sample; tug *Favorite*, repair towing engine; steamships *Balboa*, dock and undock, clean and paint, take up lost motion in valve gear, steering engine, manufacture and install liners on sides of low pressure slide valve main engine and take up lateral play, repair sea suction valve, aft circulating pumps, manufacture 4 ash pit doors, drill holes in stanchions under upper bridge and install pins as directed, etc.; U. S. S. *Eagle No. 4*, renew brick work in boilers, etc.; Steamships *Cartago*, *Yalza*, and motor ship *Scotia Maiden*, minor repairs.

PREVIOUSLY REPORTED.

Steamship *Caribbean*, miscellaneous repairs, including dry-docking; motor ship *Satoe*, general overhauling including dry-docking; barge *No. 117*, renew plates, etc.; U. S. S. *Forse*, miscellaneous repairs including dry-docking; barge *No. 19*, renew plates, etc.; motor ship *Lima*, general overhauling, including dry-docking.

Notice to Mariners.—Speed of Vessels in Canal.

THE PANAMA CANAL, BALBOA HEIGHTS, C. Z., August 8, 1921.

CIRCULAR No. 643-91 (Superseding Circular No. 643-70.):

1. By virtue of the authority conferred on me by Paragraph 102 of the Executive Order of July 9, 1914, establishing Rules and Regulations for the Operation and Navigation of the Panama Canal and Approaches thereto, including all waters under its jurisdiction, vessels transiting the Panama Canal hereafter shall not exceed the following speeds:

	Knots per hour.
Colon to Gatun Locks.....	6
Gatun Lake, in the 1,000-foot channels.....	15
Gatun Lake, in the 800-foot channels.....	12

	Knots per hour.
Gatun Lake, in the 500-foot channels.....	10
Rounding Bohio and Darien Bends.....	6
Gaillard Cut:	
Straight Reaches: Vessels 250 feet or more in length.....	6
Vessels less than 250 feet in length.....	8
Rounding Bends: (all vessels) Slowest speed at which steerageway can be maintained.	

Miraflores Lake:

Slowest speed at which steerageway can be maintained.

Vessels 360 feet or less in length and less than 20 feet draft shall not cross Miraflores Lake in less than 10 minutes.

Larger vessels shall not cross Miraflores Lake in less than 15 minutes.

Vessels of exceptional size or displacement shall not cross Miraflores Lake in less than 20 minutes.

Miraflores Locks to Pacific entrance to Canal.....	6
Entering or leaving port.....	6

2. Increase to 8 knots in speed in Gaillard Cut, in the case of vessels less than 250 feet long, does not alter the obligation imposed by regulations upon all vessels to reduce to lowest speed at which vessel can be steered, on occasion of approaching and passing vessels underway in narrow reaches, or vessels or other floating equipment when tied up, or under other circumstances, where a higher speed might introduce risk of damage.

JAY J. MORROW,

Governor.

Civil Service Examinations.

The following examinations are announced by the United States Civil Service Commission. Bulletins giving details of the examinations for positions for which there are likely to be a number of qualified persons on the Isthmus are posted at Canal post offices and clubhouses. In cases where such announcements are not posted, persons interested may obtain data on application to the Board of Civil Service Examiners, Balboa Heights, C. Z. (telephone 286).

Computer (male and female); \$1,400 to \$2,000 a year; form 1312; announcement No. 323; age below 55 years; vacancies in Coast and Geodetic Survey, Washington, D. C., or Manila, P. I., September 21, 1921.

Die and tool maker (male and female); \$6.25 per diem; form 1800; announcement No. 362; age, 20 but not 50 years; vacancies in equipment shops, Post Office Department, Washington, D. C., August 30, 1921.

Lithographic draftsman (male and female); \$1,400 a year; form 1312; age, 18 but not 55 years; vacancies in Hydrographic Office, Navy Department, Washington, D. C., September 13, 1921.

Marine engineer (motor) (male and female); \$140 a month; form 1312; announcement No. 363; age, 25 but not 50 years; vacancies in Coast and Geodetic Survey, Seattle, Wash., August 30, 1921.

Production engineer (male and female); \$9.76 per diem; form 1312; announcement No. 361; age, 23 but not 55 years; vacancies in hot metal division, Naval Ordnance Plant, South Charleston, W. Va., August 30, 1921.

Silviculturist, \$3,000 to \$3,840 a year; associate silviculturist, \$2,400 to \$2,880 a year; assistant silviculturist, \$1,800 to \$2,280 a year (male and female); forms 1312 and 2118; age, 25 but not 45 years; vacancies in Forest Service, Department of Agriculture, September 13, 1921.

Nonassembled. Date given for nonassembled examinations is the last day for filing applications and they must be in the hands of the Commission at Washington prior to the hour of closing business on that date.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Alexander Emanuel Kerr.....	25173	Jamaica.....	Colon.....	Panama Railroad.....	July 20, 1921.
Amos Erskine.....	44218	Jamaica.....	Colon.....	Panama Railroad.....	July 17, 1921.
Anthony Jacobs.....	29213	Antigua.....	Colon.....	The Panama Canal.....	July 22, 1921.
Miguel Heraso.....	53678	Panama.....	Colon.....	Panama Railroad.....	July 25, 1921.
Alexander Pickett.....	22675	St. Lucia.....	La Boca.....	Panama Railroad.....	August 1, 1921.

THE PANAMA CANAL RECORD

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Volume XV.

Balboa Heights, C. Z., August 24, 1921.

No. 2.

Important Reductions in Charges at 1,000-foot Dry Dock.

Substantial reductions in the charges for dry-docking in the 1,000-foot dry dock at Balboa have been made effective August 15. The new rates are contained in Supplement No. 1 to Tariff No. 5, which is published in this issue.

The most important rates established by the new order are for docking and undocking, and for each lay day. These are levied on the gross tonnage of merchant steamers and Army and Navy transports, colliers, hospital ships and supply ships; on the net tonnage of merchant sailing vessels; and on the actual displacement tonnage of warships which are ordinarily measured in displacement tonnage. For each of the classes the previous charge for docking and undocking was 25 cents per ton; and the charge for each lay day was 15 cents per ton. These rates have been reduced, respectively, to 15 cents and 12 cents. In the charge for docking and undocking the new rate is 60 per cent of the old. For each lay day the new rate is 80 per cent of the old.

The charge "for docking and undocking," 15 cents per ton, covers the two operations of docking and undocking in the one rate; the charge is not levied twice, once for docking and again for undocking, but both are included in the one charge.

The establishment of the new rates indicates a change of policy, in basing the charges at the Balboa dry dock on customary rates in commercial dry docks on the Atlantic, rather than on rates at Pacific docks, as heretofore.

Population of the Canal Zone.

A survey of the population of the Canal Zone, made by the police between June 10 and June 30, 1921, resulted as follows:

	AMERICANS.					ALL OTHERS.				
	Total men.	Em- ployees.	Total women.	Em- ployees.	Chil- dren.	Total men.	Em- ployees.	Total women.	Em- ployees.	Chil- dren.
Balboa District.....	2,022	1,851	2,065	279	2,048	3,105	2,227	2,071	44	3,169
Cristobal District....	768	748	607	44	613	3,036	2,866	1,480	22	2,608
Prisoners.....	35					128	9	2		9
Total employees.....		2,599		323			5,102		66	
Total persons.....	2,825		2,672		2,661	6,269		3,553		5,777
										23,757

¹ Includes 256 civilian employees of United States Army.

The population of the Gatun Lake region outside the Canal Zone is 3,250, of whom 32 are Americans.

MOVEMENTS OF OCEAN VESSELS. Week ending at midnight, August 20, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.	Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.								Nature.	Tons.	
Salvador	5	15	05	14	6	15	14	12	30	14	17	25	British.	Pacific Steam Navigation Co.	215.0	33.0	13.0
Viken	14	6	51	14	8	23	14	15	06	14	16	30	Swedish.	Transatlantic Steamship Co.	385.0	52.0	25.6
Barina	18	21	30	14	9	15	14	16	58	14	17	55	British.	Pacific Steam Navigation Co.	220.0	37.0	12.3
Thessalon	14	8	19	14	8	15	14	16	30	14	17	55	British.	Alfred Holt & Co.	440.0	52.0	29.0
Cauca	13	45	14	14	05	14	20	22	14	21	12	12	American.	Pacific Steam Navigation Co.	245.0	35.0	15.6
S. C. No. 285	14	6	20	14	6	20	14	12	59	14	6	20	American.	United States Navy.	461.0	60.0	28.6
Ramapo	14	5	58	15	6	25	15	15	06	15	16	20	American.	United States Navy.	405.0	62.0	17.0
Cape Orreaga	15	3	00	15	7	45	15	15	50	15	16	52	British.	Lyle Shipping Co.	385.0	52.0	16.9
Chancellor	15	9	06	16	6	27	16	14	51	16	16	02	British.	Harrison Line	374.0	51.0	13.0
Reading	15	13	36	16	7	35	16	16	16	16	16	16	British.	John Cory & Son	253.0	43.0	16.6
Lake Hector	16	11	15	16	11	16	16	19	35	16	20	56	American.	Swayne & Hoyt	425.0	54.0	26.0
Kunara	16	11	56	16	12	15	16	16	35	17	13	42	British.	Shaw, Saville & Albion Co.	500.0	63.0	27.8
Corinthia	16	16	30	17	7	15	17	16	03	17	17	33	British.	White Star Line	251.0	43.0	15.4
South American	16	21	04	17	8	00	17	16	24	17	17	33	British.	South American Steamship Line.	399.0	53.0	15.0
Shelley	17	9	03	17	9	20	17	17	03	17	17	57	British.	Shakespeare Shipping Co.	480.0	62.0	26.2
America	16	15	24	17	6	37	17	15	04	17	16	00	Panamanian.	J. H. Silson	384.0	50.0	26.6
Tredenhall	17	1	20	17	10	58	17	19	24	17	23	13	British.	Hain Steamship Co.	462.0	60.0	24.6
Australand	16	19	17	17	11	25	17	20	30	17	20	38	British.	Australand Steamship Co.	350.0	40.0	23.4
Nitro	13	14	52	18	6	24	18	14	50	18	15	55	Chilean.	United States Navy.	395.0	55.0	28.0
Palena	18	9	54	18	10	05	18	18	41	18	19	15	American.	Chilean Steamship Line	190.0	29.0	11.3
Seed Voyager	13	14	31	18	11	08	18	19	28	18	20	15	American.	United States Steel Products Co.	385.0	51.0	26.0
Balboa	18	12	55	18	13	10	18	21	02	18	22	15	Japanese.	Colombian Maritime Co.	380.0	48.0	16.0
England Maru	18	18	18	19	6	37	19	14	51	19	17	10	British.	Kawasaki Kisen K. Kaisha	402.0	55.0	25.10
Keats	19	6	08	19	7	30	19	16	05	19	16	05	American.	Shakespeare Shipping Co.	471.0	59.0	22.6
Altoress	19	7	25	19	7	50	19	16	37	19	18	03	British.	Barber Line (S. B.)	386.0	52.0	23.7
Port Stephens	19	5	35	19	9	40	19	18	24	19	20	35	American.	Commonwealth and Dom. Line	457.0	58.0	21.6
Rapahannock	19	11	16	19	11	38	19	19	33	19	20	14	British.	United States Navy.	380.0	52.0	14.6
Willford	19	11	16	19	11	38	19	19	33	19	20	14	British.	Williams Steamship Line	28.0	9.0	5.0
Ruapehu	19	11	38	19	11	38	19	19	33	19	20	14	British.	New Zealand Shipping Co.	425.0	53.0	22.0
Angelsen	19	12	15	19	12	40	19	21	18	19	22	45	British.	Jas. Jenkins Service Co.	28.0	9.0	5.0
Suota	19	12	15	19	12	40	19	21	18	19	22	45	American.	United States Navy.	425.0	53.0	22.0
Hippocampus	14	7	00	19	12	00	19	16	25	19	16	25	American.	Alfred F. Loomis	449.0	60.0	25.0
Texas Maru	19	7	34	20	6	34	20	13	14	20	16	12	Japanese.	Kokusai Kisen Kaisha	231.0	20.0	20.0
Harry Luckenbach	19	20	19	20	7	35	20	15	12	20	17	05	American.	Luckenbach Steamship Line.	405.0	50.0	16.0
S. C. No. 2	15	16	40	20	8	30	20	16	58	20	17	45	American.	United States Navy.	400.0	52.0	15.0
Saint Andre	19	11	03	20	9	38	20	19	20	20	21	11	French.	Cia. Gle. Transatlantique	401.0	52.0	23.0
Ballena	19	17	40	20	11	24	20	20	20	20	21	40	British.	Pacific Steam Navigation Co.	365.0	47.0	14.6
Victoria	20	8	12	20	11	55	20	20	35	20	22	50	British.	Pacific Steam Navigation Co.	401.0	52.0	23.0
Montrose	20	12	55	20	13	20	20	21	35	20	23	40	British.	Trinder-Anderson	401.0	52.0	23.0

* Launch.

* Tug, towing barge No. 496.

* Yawl.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Aug. 14.....	Abangarez	United Fruit Co.	New Orleans.	Aug. 14.....	Abangarez	United Fruit Co.	Bocas del Toro.
Aug. 15.....	Advance	Panama Railroad Steamship Line.	New York and Haiti.	Aug. 15.....	Crijnsen	Royal Netherlands W. I. Mail	Port Limon.
Aug. 15.....	Crijnsen	Royal Netherlands W. I. Mail.	Amsterdam.	Aug. 16.....	Killing	United Swan and Hunter.	High seas.
Aug. 15.....	Achilles	Panama Railroad Steamship Line.	Norfolk.	Aug. 17.....	Abangarez	United Fruit Co.	New Orleans.
Aug. 15.....	Owl	United States Navy.	Hampton Roads.	Aug. 17.....	San Gil	United Fruit Co.	Boston via Port Limon.
Aug. 15.....	Parishana	United Fruit Co.	New Orleans.	Aug. 17.....	Totoa	United Fruit Co.	New York.
13 23 06	14	7 35	14	13 56	14	15	10
San Ubaldo.....	14	6 30	14	8 20	14	13 28	15
Essequibo.....	14	10 30	14	12 34	14	20 09	16
Scotia Maiden.....	15	6 10	15	7 18	15	15 30	18
Wangaratta.....	15	6 10	15	7 18	15	15 30	18
Mundetta.....	15	12 15	15	12 53	15	20 15	20
West Lewark.....	15	18 00	16	7 21	16	16 09	17
Lake Fithian.....	15	18 45	16	8 34	16	16 24	18
Renacu.....	16	5 00	16	9 10	16	17 07	17
Toba Maru.....	17	1 25	17	7 21	17	15 45	18
Ryukyu Maru.....	17	21 00	17	8 14	17	16 35	17
Mexican.....	17	5 13	17	9 58	17	18 43	17
Stanley Dollar.....	17	23 15	17	9 58	17	18 43	17
Oruba.....	17	7 10	17	11 37	17	19 52	18
West Honaker.....	17	14 15	18	7 13	18	15 55	18
Hancock Coun- ty.....	17	17 03	18	8 30	18	16 25	18
Steel Worker.....	17	20 53	18	9 18	17	17 30	19
Manavi.....	18	1 12	18	9 42	18	18 15	3
Bengloe.....	18	0 01	18	10 21	18	19 35	18
S. C. No. 285.....	18	12 45	18	13 10	18	18 00	21
West Isleta.....	18	15 35	19	7 20	19	15 58	21
Iris.....	18	21 30	19	8 27	19	17 20	20
Ucayali.....	19	12 10	19	14 20	19	21 13	20
Acajutla.....	19	15 00	20	7 15	20	15 20	20
North Ameri- can.....	20	0 05	20	7 24	20	15 45	20
Kennecott.....	18	21 15	20	8 21	20	16 35	20
Speaker.....	19	16 30	20	9 09	20	17 15	20
Port Napier.....	19	18 00	20	10 16	20	18 00	20
Janelew.....	20	5 30	20	10 58	20	19 52	21
Ohioan.....	20	7 40	20	11 38	20	20 17	20
Santa Barbara.....	20	10 20	20	12 36	20	21 38	21
Sarpis.....	20	10 40	20	12 44	20	23 21	21
Tokufuku Maru.....	20	13 23	20	14 18	21	0 10	21

* Coconut oil and meal.

* Canned goods and barley.

* Metals, nitrate and general.

* Canned goods, barley, flour.

* Nitrate and copper ore.

* Coffee, cocoa, ivory nuts, hides, specie.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Aug. 14.....	Abangarez	United Fruit Co.	New Orleans.	Aug. 14.....	Abangarez	United Fruit Co.	Bocas del Toro.
Aug. 15.....	Advance	Panama Railroad Steamship Line.	New York and Haiti.	Aug. 15.....	Crijnsen	Royal Netherlands W. I. Mail	Port Limon.
Aug. 15.....	Crijnsen	Royal Netherlands W. I. Mail.	Amsterdam.	Aug. 16.....	Killing	United Swan and Hunter.	High seas.
Aug. 15.....	Achilles	Panama Railroad Steamship Line.	Norfolk.	Aug. 17.....	Abangarez	United Fruit Co.	New Orleans.
Aug. 15.....	Owl	United States Navy.	Hampton Roads.	Aug. 17.....	San Gil	United Fruit Co.	Boston via Port Limon.
Aug. 15.....	Parishana	United Fruit Co.	New Orleans.	Aug. 17.....	Totoa	United Fruit Co.	New York.
13 23 06	14	7 35	14	13 56	14	15	10
14 10 30	14	8 20	14	12 34	14	20 09	16
15 6 10	15	7 18	15	7 18	15	15 30	18
15 12 15	15	12 53	15	20 15	20	15 30	18
15 18 00	16	7 21	16	16 09	17	16 24	18
15 18 45	16	8 34	16	16 24	18	17 07	17
16 5 00	16	9 10	16	17 07	17	16 36	18
16 5 00	16	9 10	16	17 07	17	16 36	18
17 1 25	17	7 21	17	15 45	18	17 07	17
17 21 00	17	8 14	17	16 35	17	17 00	17
17 5 13	17	9 58	17	18 43	17	17 00	17
17 23 15	17	9 58	17	18 43	17	17 00	17
17 7 10	17	11 37	17	19 52	18	9 06	18
17 14 15	18	7 13	18	15 55	18	21 55	18
17 17 03	18	8 30	18	16 25	18	16 35	18
17 20 53	18	9 18	17	17 30	19	3 45	19
18 1 12	18	9 42	18	18 15	3	18 15	3
18 0 01	18	10 21	18	19 35	18	21 12	18
18 12 45	18	13 10	18	18 00	21	18 00	21
18 15 35	19	7 20	19	15 58	21	18 12	21
18 21 30	19	8 27	19	17 20	20	20 12	20
19 12 10	19	14 20	19	21 13	20	21 13	20
19 15 00	20	7 15	20	15 20	20	15 20	20
20 0 05	20	7 24	20	15 45	20	23 30	20
18 21 15	20	8 21	20	16 35	20	17 00	20
19 16 30	20	9 09	20	17 15	20	19 00	20
19 18 00	20	10 16	20	18 00	20	20 10	20
20 5 30	20	10 58	20	19 52	21	6 30	20
20 7 40	20	11 38	20	20 17	20	20 17	20
20 10 20	20	12 36	20	21 38	21	7 25	20
20 10 40	20	12 44	20	23 21	21	11 00	20
20 14 18	21	0 10	21	6 19	21	6 19	21

* ARRIVALS.

* DEPARTURES.

* Tug.

(Continued on page 20, column 2.)

Manufactured goods:	260	53	1,963	2,384	47,914	4,155	21,307	22,589	3,558	9	655
Iron and steel		42	32	559	5,410	1,283	602	3,596	435	27	100
Machinery			1,050	145	7,027	1,330	5,742	985	65		100
Railroad material		120	108	508	1,257	538	57		191	7	1,200
Textiles											
Other			501	686	3,995	487	3,688	341	650	16	
Metals:											
Copper				4	550			550	4		
Iron			4,637	251	1,208		5,537	306	250	1	
Lead				10	50			50	9	1	
Tin				173	1,416	172	1,210	34	173		
Zinc								278			
Musical Instruments											
Nuts.				66	69		60				9
Oils:											
Coconut				2							
Cotton seed					120		120				
Crude					28						
Linsed			603	407		9,919	1,000	27		4,545	
Olive					15		15				
Refined		4		4	11,476	4,295		4,504	6,832	4	
Vegetable		10		350	150	10	150		350		
Ores:											
Iron					90		90				
Manganese				30			30				
Paint				79	134			14	109		
Paper				83		1,257	1,227	62	149	27	
Paper pulp		10	144	207		109		207			
Potash				20			20				
Rags			500				500				
Rice		95				95					
Resin		5			1,880	5	97	1,685	98		
Rubber, manufactured				7	72		50	29			
Shells, oyster				1,219		547		1,219			
Silk					100		100				
Silver sand					40			40			
Soap			22								
Soda			4,150		52		4,150				
Spices				152	1,515		1,667				
Tar				73			73				
Tea				23			23				
Tapioca				168			168				
Tobacco					19		19				
Toys		2	146	114	509	2	157	352		114	
Turpentine				14			160				
Varnish				9				9			
Wax paraffin				3				3			
Woods:				545		101		340	104		
Hard					50		50				
Dye					20		20				
General											
Totals	50	4,980	8,674	11,442	51,285	11,100	36,148	7,548	19,990	1,731	3,603
General	50	4,980	8,674	11,442	51,285	11,100	36,148	7,548	19,990	1,731	3,603
Totals	50	4,980	8,674	11,442	51,285	11,100	36,148	7,548	19,990	1,731	3,603
General	50	4,980	8,674	11,442	51,285	11,100	36,148	7,548	19,990	1,731	3,603

PACIFIC TO ATLANTIC.

(Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—							
	Hawaiian Islands	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other Europe.	Cristobal, C. Z.	East Coast of Canada.	West Indies.	East coast of South America.
Totals.	107	7	7			100		100	2	3	7			
Alcohol.						7		2						
Automobiles								5						
Balsam														
Bark.														
Cassara.														
Cinchona														
Oreochina														
Peruvian														
Quillay														
Barley														
Beans and peas														
Beeswax														
Borax														
Bristles														
Cacao														
Canned goods:														
Fish														
Fruit														
Meat														
Milk														
Vegetables														
Others														
Chemicals														
Cocoa leaves														
Coffee														
Cold storage:														
Beef														
Butter														
Cheese														
Glazo														
Lard														
Mutton														
Pork														
Rabbits														
Tallow														
Others.														
Copra.														

Cotton, raw	3,281	61	46	1,425	1,749	786	979	16	1,500	
Cotton seed	5,380			4,020	1,360		1,361	4,016		
Cotton seed oil cake	717				717		361		153	
Flax	213		213				213			
Flour	1,400	1,352	1,400	25,188		40	9,906	18,934		
Fruit:										
Dried										
Fresh	3,048		200	2,818		226	322	2,725	1	
Guano	226			226			2,350			
Gun, Kauri	2,350		2,350				219			
Hardwoods	219	61	763	95	1	763	219	96	61	
Hats	920				13	3		2	8	
Hemp	1,705		407	1,268	30	1,298	407	4,000	23	
Honey	233		10	223		200	10		46	
Hops	4,000				46					
Horns and hoofs	46									
Indigo	5	5							5	
Infusorial earth	277			277		277				
Ivory nuts	5		5							
Iodine	2,368				2,368	942		238	1,188	
Jute	5				5		5			
Licorice root	2,688		2,688			2,688				
Liquors	15				15				15	
Livestock	3,380			3,380		2,000				
Lumber	31,699	140	3,246	28,310		26,799	653	861	140	3,246
Manufactured goods:										
Railroad material										
Textiles	37		40	37		37				
Other	42			2		40		2	2	
Metals:										
Copper	9,529									
Gold and silver	20			3,408	3,828	5,532		1,482	2,245	
Iron	75			20				20	20	
Lead	206			75		75				
Tin	778		200		6		200		6	
Other	693				678	100		678		
Nitrates	26,031				693		693			
Nuts	221			221	26,031	23,037	1,014	2,000		
Oats	221						221			
Oil:	3,185		1,016	221	2,169		2,285	900		
Coconut	7,073									
Eucalyptus	4		4			7,073	4			
Refined	1,194			1,194						
Vegetable	1							1,194		
Ores:										
Antimony	453									
Copper	5,490		453			453				
Gold and silver	106				5,460	5,490				
Tungsten	125				106	76	30			
Other	213	20	125		193	193	20			
Paints	46			46						46

COMMODITY STATISTICS.—PACIFIC TO ATLANTIC—Continued.

(Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—							
	Hawaiian Islands.	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other Europe.	Cristobal, C. Z.	East Coast of Canada.	West Indies.	East coast of South America.
Total.	4		3	7,500		1		1	3					
Paper	7,500								7,500					
Phosphates	7,767							5	1,538	4,249	117		1,863	
Rice	894							4						
Rubber, raw	409					14		2			2			
Rubber								392		409				
Salt peter														
Seeds:														
Clover	312			11	130		171							
Grass	100			100	109			130	182					
Silk	109							109	100					
Skins and hides	4,658	140		1,986	1,709	200	623	2,080	2,099	188	321			
Sugar	48,394	298			13,152		2,539	45,638	1,972	488	301			
Tar	70						70			70				
Tea	259				259			250						
Tobacco	12				12					29				
Vegetables	20						20			12				
Walnuts	390						390	240			20			
Wheat	99,267		500	7,385		87,357	4,025		60,520	38,747	150			
Wool	14,030			8,121	1,074	4,445		5,528	8,253		30			
General	14,845	978	3	170	3,951	6,670	3,073	8,545	827	5,017	104		204	148
Grand totals	450,542	33,305	8,559	63,747	39,860	222,647	77,502	164,736	165,220	102,416	11,167	3,246	3,540	208

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending August 20, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Canca.....	Pacific Steam Navigation Co.....		August 14.....		195½
Balboa.....	Panama Railroad Steamship Line.....		August 18.....		20
Abangarez.....	United Fruit Co.....		August 14.....		9
Palena.....	United Fruit Co.....		August 18.....		725
Chancellor.....	Harrison Steamship Co.....	August 15.....	August 16.....	183	
Advance.....	Panama Railroad Steamship Line.....	August 15.....	August 19.....	1,767	193
Parissmina.....	United Fruit Co.....	August 15.....	August 17.....	1,188	30
Crijnsen.....	Royal Netherlands W. I. Mail.....	August 15.....	August 15.....	25	
Tolosa.....	United Fruit Co.....	August 16.....	August 17.....	232	66
San Gil.....	United Fruit Co.....	August 16.....	August 17.....	12	26
Abangarez.....	United Fruit Co.....	August 17.....	August 17.....	2½	9
Toba Maru.....	Japanese Steamship Co.....	August 17.....	August 17.....	328	
Crijnsen.....	Royal Netherlands W. I. Mail.....	August 17.....	August 18.....	20	183½
Manavi.....	Pacific Steam Navigation Co.....	August 17.....	August 19.....	499	
Saint Andre.....	French Line.....	August 19.....	August 19.....	39	
Ucayali.....	Panama Railroad Steamship Line.....	August 19.....	August 20.....	17	
Bayano.....	United Fruit Co.....	August 20.....	August 20.....	58	
Colon.....	Panama Railroad Steamship Line.....	August 20.....		1,861	

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending August 20, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Hahira.....	United States Shipping Board.....	August 11.....	August 12.....	2,857	
Salvador.....	Pacific Steam Navigation Co.....	August 14.....	August 14.....		46
Pacific.....	Johnson Line.....	August 15.....	August 16.....	780	2
Depere.....	United States Shipping Board.....	August 16.....	August 16.....	151	50
Rakuyu Maru.....	Toyo Kisen Kaisha.....	August 17.....	August 17.....	366	
Manavi.....	Pacific Steam Navigation Co.....	August 18.....	August 18.....	17	
Acajutla.....	Pacific Steam Navigation Co.....	August 19.....	August 20.....	1	

Supplement No. 1 to Tariff No. 5.—Dry Docks.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,

BALBOA HEIGHTS, C. Z., August 8, 1921.

ITEM 13.—DRY DOCKS.

(Effective August 15, 1921.)

1. Rates:	Balboa. Cristobal.	
Men-of-war. Per ton, actual displacement tonnage.		
For docking and undocking.....	\$0.15	\$0.15
For each lay day.....	.12	.10
Army and Navy transports, colliers, hospital ships, and supply ships, per gross ton, Panama Canal measurement:		
For docking and undocking.....	.15	.15
For each lay day.....	.12	.10
Merchant steamers. Per gross ton, Panama Canal measurement:		
For docking and undocking.....	.15	.15
For each lay day.....	.12	.10
Merchant sailing vessels. Per net ton, Panama Canal measurement:		
For docking and undocking.....	.15	.15
For each lay day.....	.12	.10
Minimum charges:		
Docked alone—		
When the dock is pumped for the exclusive benefit of one vessel and is occupied by a single vessel—		
For docking and undocking.....	(*) 75.00	
For lay days.....	150.00	45.00
(*) At Balboa, the minimum charge for docking days is the actual cost of docking and undocking calculated in the following manner:		

1. Rates.—Continued.

Minimum charges.—Continued.

Docked alone—

(The actual cost of labor of docking and undocking, plus the prevailing division surcharge, the cost of unusual material used and \$150 for the use of the dry dock) plus 10 per cent, The Panama Canal surcharge.

NOTE—The \$150 per day for the use of the Balboa dry dock covers the cost of power and labor for operating the dry dock pumps and the depreciation and maintenance of the pumping plant and all other dry dock structures and equipment except the 50-ton dry dock crane, for which an additional charge is made at rates fixed under Item 9 of this tariff or supplements thereto.

Docked with other vessels:

At Balboa—

Docking days—When a vessel is docked with one or more other vessels, the minimum charge for docking days is the actual cost for docking and undocking as shown above, except that the \$150 per day for use of dry dock will be equally divided on the basis of the number of small vessels docked, regardless of their tonnage or valuation.

Lay days—The regular rate per ton for lay days will apply except in those instances in which the ship's tonnage multiplied by the regular rate fails to cover the ship's pro rata share of the \$150 flat rate for the use of the dry dock.

At Cristobal—

When a vessel, whose tonnage is below the amount which at regular rates would equal less than the minimum rate above, is docked with one or more vessels:

For docking and undocking.....	\$60.00
For lay days.....	30.00

12. The rates for docking and undocking cover the use of floats, staging horses, stage planking, staging lines, trestles, scrapers, brushes, etc., for use in connection with cleaning and painting the vessel or making repairs. The cost of work performed in rigging staging, etc., except as described in the following paragraph will be charged for at the regular rates.
13. No charge will be made for the services of dry dock cranes in connection with preparing the dock, the handling and arranging of ordinary blocks, shoring, gangways, or brows or similar work in connection with the actual docking or undocking, or for handling trestles and staging in connection with cleaning and painting underwater bodies of vessels.
14. Services of the dry dock crane not covered in the foregoing paragraph will be charged for at the regular rate per hour or fraction thereof provided for in Item 9 of this tariff or supplements thereto.
15. Shores, blocks, staging, or other dock equipment damaged or destroyed by the ship or her crew, except as a result of fair wear and tear, will be charged at regular rates.
16. Any unusual expense involved in docking a vessel will be charged against the vessel.
17. Vessels lying at wharves solely for the purposes of waiting to enter dock will not be charged wharfage.

JAY J. MORROW,

Governor, The Panama Canal.

President, Panama Railroad Company.

Government Vessels Which Pay No Tolls.

Noncommercial Traffic Through The Panama Canal During Fiscal Year 1921.

The following is a statement of government vessels, other than Canal equipment, passing through the Panama Canal free of tolls,

during the fiscal year 1921. In the tonnage figures here shown, Panama Canal net tonnage is given on colliers, tankers, transports, cargo, and supply ships, and displacement tonnage on battleships, cruisers, destroyers, minelayers, etc., where the Panama Canal net tonnage is not ascertainable. There is no duplication of tonnage figures.

None of the vessels included in this statement paid tolls, but a computation has been made showing the amount of tolls these vessels would have paid, if they had been assessed at commercial rates:

ATLANTIC TO PACIFIC.					PACIFIC TO ATLANTIC.					
	No. of ships.	Tonnage.		Tolls. ¹	Tons of cargo carried.	No. of ships.	Tonnage.		Tolls. ¹	Tons of cargo carried.
		Panama Canal net.	Dis- placement				Panama Canal net.	Dis- placement		
July	18	14,991	7,350	\$18,771.85	23,253	8	13,301	2,910	\$13,084.25	4,500
August	17	19,934	8,493	24,767.75	25,298	13	11,594	98,420	58,738.50	300
September	10	31,579	2,890	35,468.34	32,379	2	8,910		10,386.45	411
October	22	27,312	31,166	45,763.00	31,230	4	7,690	4,150	11,198.05	2,992
November	13	31,456	3,238	33,151.38	37,475	3	8,933		8,400.16	94
December	19	26,108	24,717	41,913.40	40,236	2	6,749	1,000	5,359.28	
January	60	74,548	263,975	214,607.00	87,889	14	10,195	37,857	26,271.48	
February	32	29,387	36,791	53,210.95	52,711	62	48,076	250,887	166,070.95	1,800
March	23	27,333	8,385	32,522.30	39,160	14	11,161	13,992	15,943.15	239
April	15	25,174	880	27,690.11	35,214	12	6,986	4,396	7,229.60	
May	22		32,288	16,144.00	4,000	8	403	5,560	3,070.16	
June	23	21,559	44,731	44,876.41	34,188	10	4,124	14,587	10,262.78	400
Totals.	274	329,381	464,904	\$588,886.49	443,033	152	138,122	433,759	\$336,014.80	10,736

RECAPITULATION.

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Number of vessels	274	152	426
Panama Canal net tonnage	329,381	138,122	467,503
Displacement tonnage	464,904	433,759	898,663
Tolls	\$588,886.49	\$336,014.80	\$924,901.29
Tons of cargo carried by government vessels	443,033	10,736	453,769

¹ Tolls were not charged; figures indicate amounts collectible if tolls had been levied.

Rates for Cable Messages to Cartagena.

The All-America Cables, Inc., announces a rate of 23 cents per word on commercial messages from stations on the Isthmus to Cartagena, Colombia, effective August 17. The rate for official messages of the United States Government is 13 cents per word. The rate had previously been 30 cents per word for both commercial and Government messages.

Reopening of the Hotel Aspinwall, Taboga.

The Hotel Aspinwall, on Taboga Island, which was closed on July 1 on account of not being self-sustaining, has been leased for 3 years, beginning September 1, and will be reopened on or about that date. The lessee is Mr. James A. Malloy, at present manager of the Strangers Club, in Colon.

The Panama Canal has sought to retain the hotel in operation as a recreational resort for its employees. This has been provided in paragraphs 4 and 5 of the conditions of lease, which stipulate a 20 per cent reduction in rates for Canal, Panama Railroad, and Army and Navy employees, and that the hotel be operated in accordance with the sanitary regulations in effect in the Canal Zone and "in a manner to attract the patronage of employees of the Canal and the military organizations previously referred to."

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Volume XV.

Balboa Heights, C. Z., August 31, 1921.

No. 3.

CANAL WORK IN JULY.

The following is the report of the Governor to the Secretary of War,
of Canal work in the month of July, 1921:

BALBOA HEIGHTS, C. Z., August 26, 1921.

The Honorable, the Secretary of War,

Washington, D. C.

SIR: I have the honor to submit the following report of The Panama Canal for
the month of July, 1921.

CANAL TRAFFIC.

The total number of vessels and craft of all kinds through The Panama Canal, as
compared with the preceding month and with the corresponding month of last year,
was as follows:

	July, 1921.	June, 1921.	July, 1920.
Commercial vessels.....	206	193	225
United States Government vessels.....	23	33	26
Panama Government vessels.....	5		
Launches (under 10 tons).....	3	3	3
Total vessels and craft through Canal.....	237	229	254

COMMERCIAL TRAFFIC.¹

A comparison of the commercial traffic for July, 1921, with that of the preceding
month, of the corresponding month of 1920, and of the average month's traffic for
the past 12 months, shows the following:

	July, 1921.	June, 1921.	July, 1920.	Average per month for past year.
United States equivalent net tonnage.....	652,439	613,894	705,643	774,222
Panama Canal net tonnage.....	810,613	761,477	856,798	947,474
Registered gross tonnage.....	1,022,802	960,857	1,109,079	1,203,011
Registered net tonnage.....	650,368	610,491	702,951	765,555
Tolls earned.....	\$804,503.11	\$751,964.12	\$842,312.05	\$936,590.08
Tons of cargo carried.....	708,982	694,720	886,814	951,838

Ocean-going commercial vessels passing through the Panama Canal averaged 6.67
ships per day. The average tonnage, tolls, and tons of cargo carried, per commercial
vessel, as compared with last month's traffic, were as follows:

Average per vessel.	July, 1921.	June, 1921.
United States equivalent net tonnage.....	3,167	3,197
Panama Canal net tonnage.....	3,935	3,965
Registered gross tonnage.....	4,965	5,004
Registered net tonnage.....	3,157	3,180
Tolls.....	\$3,905.35	\$3,703.95
Tons of cargo (all vessels).....	3,441	3,618
Tons of cargo (laden vessels only).....	3,961	3,970

¹ NOTE.—Commercial traffic includes all vessels of 10 tons or more transiting the Panama Canal, with the exception
of vessels owned by the United States Government, or chartered by the Government to carry Government supplies.

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

While all cargo-carrying vessels pay tolls on their net tonnage, as determined by established rules for measuring their available cargo-carrying space, yet the rate of such tolls per cargo ton furnishes interesting data, varying as it does not only in different ships, but in vessels of different nationalities.

The average rate of tolls paid on each ton (2,240 pounds) of cargo passing through the Panama Canal from the Atlantic to the Pacific was \$1.44 and from the Pacific to the Atlantic \$0.83 per ton, with a general average of \$1.03 per ton. The average rate paid per cargo ton, by nationality of vessels, is shown in the following statement:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.53	\$0.96	\$1.10
Chilean.....	5.39	6.48	6.07
Danish.....	1.54	.57	.81
Dutch.....	1.81	.66	.97
French.....	22.18	1.31	2.32
Italian.....	5.62	2.69	3.28
Japanese.....	1.06	.75	.92
Mexican.....	11.64		11.64
Norwegian.....	1.04	1.48	1.10
Peruvian.....	5.12	1.08	1.58
Swedish.....	1.28	.53	.62
United States.....	1.40	.75	.96
Average rate all ships, July, 1921.....	1.44	.83	1.05
Average rate all ships, June, 1921.....	1.11	.93	1.02
Average rate all ships, May, 1921.....	1.06	.89	.97

The difference in the rate of tolls paid per cargo ton, by vessels of various nationalities is due to some vessels being but lightly loaded while others are carrying capacity cargoes. This also accounts for the variation in the rates per cargo ton as between northbound and southbound cargo for ships of the same nationality.

The lowest rate of tolls paid per cargo ton by any vessel passing through the Panama Canal during the month of July, 1921, was paid by the steamship *Willfarø*, United States registry, bound from Portland, Oreg., to Charleston, S. C., and carrying 8,255 tons of canned goods, lumber, copper metal, and general cargo, on which tolls of \$4,160.00 were assessed, or a rate of 50.3 cents per cargo ton.

COMMODITY STATISTICS.

A classification of all cargo passing through the Panama Canal, by commodities, giving the origin and destination of the same, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of August 24, 1921. A brief summary of the principal items is shown herewith:

CARGO PASSING FROM ATLANTIC TO PACIFIC.

Commodity.	Cargo tons.	Per cent of total cargo.	
		This month	Last month
Manufactured goods:			
Iron and steel.....	52,574	28.7	20.7
Machinery.....	6,043		
Railroad material.....	8,222		
Textiles.....	1,993		
Other.....	5,182		
Oils:			
Crude.....	14,491	11.7	35.7
Refined.....	15,635		
Cotton, raw.....	26,083	10.1	3.3
Metals.....	8,575	3.3	0.9
Coal and coke.....	8,258	3.2	4.3
Silver sand.....	4,150	1.6	
Cement.....	1,871	0.7	1.5
Soda.....	1,667	0.6	
Rosin.....	1,885	0.7	0.3
Paper.....	1,574	0.6	0.2
Liquors.....	1,419	0.5	0.1
Salt.....	1,766	0.7	0.1
Other and general.....	97,052	37.6	31.1
Totals.....	258,440	100.0	

CARGO PASSING FROM PACIFIC TO ATLANTIC.

Commodity.	Cargo tons.	Per cent of total cargo.	
		This month	Last month
Wheat.....	99,267	22.1	17.6
Sugar.....	43,394	10.8	3.2
Cold storage:			
Mutton.....	21,329	7.5	10.3
Cheese.....	5,433		
Other.....	7,063		
Lumber.....	31,699	7.0	9.4
Flour.....	28,940	6.4	1.6
Barley.....	27,780	6.2	5.7
Nitrates.....	26,051	5.8	17.6
Canned goods:			
Fish.....	10,596	5.3	3.2
Fruit.....	10,482		
Other.....	2,906		
Wool.....	14,030	3.1	1.4
Metals:			
Copper.....	9,259	2.4	3.3
Other.....	1,752		
Oil:			
Coconut.....	7,073	1.8	2.2
Other.....	1,199		
Phosphates.....	7,500	1.6	
Rice.....	7,767	1.7	1.9
Coffee.....	6,675	1.5	3.3
Beans and peas.....	5,762	1.3	1.1
Ore, copper.....	5,490	1.2	2.6
Cotton seed.....	5,380	1.2	0.5
Skins and hides.....	4,658	1.0	0.6
Cacao.....	4,072	0.9	1.2
Hops.....	4,000	0.9	
Other and general cargo.....	45,985	10.3	12.6
Totals.....	450,542	100.0	

UNITED STATES COASTWISE TRAFFIC.

The number of vessels engaged in the United States coastwise traffic, passing through the Panama Canal during July, 1921, together with their tonnage, tolls, and tons of cargo carried, as compared with the preceding months of the calendar year was as follows:

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.20	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,237	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	15	70,477	72,103.75	92,659

UNITED STATES SHIPPING BOARD VESSELS.

The number of vessels under control of the United States Shipping Board passing through the Panama Canal during the month of July, 1921, together with their Panama Canal net tonnage, tolls, and tons of cargo carried, as compared with preceding months of the calendar year, was as follows:

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. Net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,052.01	108,285
March.....	18	94,823	96,782.80	83,973	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767

In addition to the above, 2 vessels under control of the United States Shipping Board, passed through the Panama Canal carrying Government supplies, combining a Panama Canal net tonnage of 8,968 and carrying 13,793 tons of cargo.

TRAFFIC BY TRADE ROUTES.

Statements attached to this report show the origin and destination of all cargo passing through the Panama Canal as accurately as the same can be segregated from the cargo declarations submitted by the ship's masters (*see* pages 40 and 41). Below is given a summary of the traffic passing over the principal trade routes, showing the number of vessels, their Panama Canal net measurement, and the amount of cargo carried. The vessels shown as in ballast represent cargo-carrying vessels only; warships, tugs, yachts, etc., not being included as "ballast."

Trade routes.	Total vessels.			Vessels in ballast.	
	Num-ber.	Panama Canal net tonnage.	Cargo.	Num-ber.	Panama Canal net tonnage.
<i>Atlantic to Pacific.</i>					
United States coastwise.....	19	101,924	60,997		
East coast of United States to Far East.....	13	63,969	70,684		
Cristobal, C. Z., to west coast of South America.....	12	17,619	1,569	3	1,618
Europe to west coast of United States.....	9	44,064	19,232	3	13,918
Europe to west coast of South America.....	7	29,498	11,925		
East coast of United States to west coast of South America.....	6	18,539	9,222		
East coast of United States to Australasia.....	5	23,280	24,068		
Europe to Australasia.....	4	29,486	10,846		
Europe to west coast of Canada.....	4	21,060	3,357		
Cristobal, C. Z., to west coast of Central America.....	3	2,104	1,666		
East coast of Mexico to west coast of United States.....	2	10,078	8,000	1	5,043
East coast of Mexico to west coast of South America.....	2	8,611	14,069		
Cristobal, C. Z., to west coast of United States.....	2	3,765	2,887		
East coast of United States to Balboa, C. Z.....	1	4,400	950		
Mexican coastwise.....	4	348	10	3	261
Miscellaneous trade routes.....	10	24,306	18,958	4	6,670
Warships.....	2	(¹)	(¹)		
Total, Atlantic to Pacific, July, 1921.....	105	403,051	258,440	14	27,510
Total, Atlantic to Pacific, June, 1921.....	103	415,302	359,584	7	18,178
Total, Atlantic to Pacific, July, 1920.....	107	361,859	398,317	10	21,729
<i>Pacific to Atlantic.</i>					
West coast of United States to Europe.....	17	84,491	135,326		
United States coastwise.....	14	70,477	91,991		
West coast of South America to Cristobal, C. Z.....	14	23,607	8,369		
Australasia to Europe.....	11	70,124	63,747		
West coast of South America to east coast of United States.....	10	32,992	33,125	1	5,095
West coast of South America to Europe.....	8	33,678	31,719		
Far East to east coast of United States.....	6	30,048	39,829		
West coast of Canada to Europe.....	3	15,970	24,255		
West coast of United States to Cristobal, C. Z.....	2	3,765	1,557		
West coast of Central America to Cristobal, C. Z.....	2	1,398	1,779		
West coast of United States to east coast of Mexico.....	1	8,409		1	8,409
West coast of South America to east coast of Mexico.....	1	5,105		1	5,105
Miscellaneous.....	9	27,493	18,845	3	11,774
Warships.....	3	(²)	(²)		
Total, Pacific to Atlantic, July, 1921.....	101	407,562	450,542	6	30,383
Total, Pacific to Atlantic, June, 1921.....	89	346,175	335,136	8	29,922
Total, Pacific to Atlantic, July, 1920.....	118	494,948	488,497	20	97,397

¹ French cruiser of 12,160 tons displacement, and Italian cruiser of 3,880 tons displacement.

² Three British warships of 5,744 tons displacement.

LATIN-AMERICAN TRAFFIC.

The number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality, were as follows:

ATLANTIC TO PACIFIC.

Nationality.	No. of vessels	TONNAGE.				Tolls.	Cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
British	21	40,412	51,671	79,746	42,178	\$49,512.32	28,942
United States	10	19,589	23,637	31,193	19,615	23,994.65	21,419
Mexican	4	564	348	1,104	476	433.65	10
Peruvian	2	2,495	5,356	8,049	4,187	3,118.75	609
Norwegian	1	4,418	5,043	6,987	4,422	3,630.96	.....
French	1	3,638	4,170	5,796	3,689	4,547.50	205
Italian	1	3,149	3,600	5,355	3,160	3,936.25	700
Dutch	1	2,518	2,707	3,375	2,574	3,147.50	3,220
Chilean	1	1,811	3,182	3,798	2,272	2,263.75	420
July, 1921	42	78,594	99,714	136,403	82,573	94,585.33	55,525
June, 1921	53	117,044	149,446	190,457	117,636	142,071.96	129,973
July, 1920	62	.....	172,561	231,426	140,718	.....	176,093

PACIFIC TO ATLANTIC.

Nationality.	No. of vessels	TONNAGE.				Tolls.	Cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
British	20	36,594	48,626	61,638	37,126	\$42,253.63	36,270
United States	12	34,137	40,367	50,043	32,646	37,586.95	33,016
Peruvian	3	3,699	7,742	12,452	6,277	4,623.75	4,284
Norwegian	3	9,846	11,422	15,566	9,810	8,555.25	820
Italian	2	6,049	8,060	10,530	6,496	7,561.25	2,804
Chilean	2	3,608	6,250	7,612	4,560	4,510.00	695
French	1	4,326	4,363	5,923	3,763	5,235.60	4,000
Dutch	1	1,603	3,057	2,655	1,625	2,003.75	2,479
July, 1921	44	99,862	129,887	166,419	102,303	112,330.18	84,368
June, 1921	48	101,952	133,379	173,595	105,412	117,073.95	112,825
July, 1920	52	.....	166,017	222,986	137,644	.....	96,004

CLASSIFICATION OF COMMERCIAL TRAFFIC.¹

A statement of this month's commercial traffic, classified (1) according to the nationality of the various ships passing through the Panama Canal and (2) segregating laden and unladen vessels, is shown in the following tabulations:

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Number and nationality of commercial vessels passing through the Canal:			
British	40	42	82
Chilean	1	2	3
Danish	4	3	7
Dutch	2	2	4
French	2	1	3
Italian	2	2	4
Japanese	8	4	12
Mexican	4	.....	4
Norwegian	2	3	5
Panaman	1	.....	1
Peruvian	2	3	5
Swedish	1	2	3
United States	36	37	73
Total, July, 1921	105	101	206
Total, June, 1921	103	89	192
Total, July, 1920	107	118	225
United States equivalent net tonnage of commercial vessels passing through the Canal, by nationality:			
British	124,878	121,301	246,179
Chilean	1,811	3,608	5,419
Danish	17,472	9,944	27,416
Dutch	6,992	7,006	13,998
French	3,638	4,326	7,964
Italian	3,149	6,049	9,198
Japanese	33,741	17,176	50,917
Mexican	564	.....	564

¹ Commercial traffic includes all ocean-going vessels transiting the Canal, excepting vessels owned or chartered by the United States Government.

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States equivalent net tonnage of commercial vessels passing through the Canal, by nationality—Continued:			
Norwegian.....	8,927	9,846	18,773
Panaman.....	69		69
Peruvian.....	2,495	3,699	6,194
Swedish.....	2,248	6,719	8,967
United States.....	118,346	138,435	256,781
Total, July, 1921.....	324,330	328,109	652,439
Total, June, 1921.....	336,515	277,379	613,894
Total, July, 1920.....	295,834	409,809	705,643
Panama Canal net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	151,882	148,195	300,077
Chilean.....	3,182	6,250	9,432
Danish.....	21,007	12,120	33,127
Dutch.....	9,618	9,669	19,287
French.....	4,170	4,363	8,533
Italian.....	3,600	8,060	11,660
Japanese.....	37,455	19,770	57,225
Mexican.....	348		348
Norwegian.....	10,680	11,422	22,102
Panaman.....	69		69
Peruvian.....	5,356	7,742	13,098
Swedish.....	4,089	10,129	14,218
United States.....	151,595	169,842	321,437
Total, July, 1921.....	403,051	407,562	810,613
Total, June, 1921.....	415,302	346,175	761,477
Total, July, 1920.....	361,850	494,948	856,798
Registered gross tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	192,822	188,063	380,885
Chilean.....	3,798	7,612	11,410
Danish.....	26,279	15,216	41,495
Dutch.....	10,685	11,039	21,724
French.....	5,796	5,923	11,719
Italian.....	5,355	10,530	15,885
Japanese.....	49,558	26,274	75,832
Mexican.....	1,104		1,104
Norwegian.....	14,103	15,566	29,669
Panaman.....	123		123
Peruvian.....	8,049	12,452	20,501
Swedish.....	3,767	10,877	14,644
United States.....	187,231	210,580	397,811
Total, July, 1921.....	508,670	514,132	1,022,802
Total, June, 1921.....	520,884	439,973	960,857
Total, July, 1920.....	469,188	639,891	1,109,079
Registered net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	120,753	119,366	240,119
Chilean.....	2,272	4,560	6,832
Danish.....	17,508	9,717	27,225
Dutch.....	7,069	7,062	14,131
French.....	3,689	3,763	7,452
Italian.....	3,160	6,496	9,656
Japanese.....	32,483	16,954	49,437
Mexican.....	476		476
Norwegian.....	8,915	9,810	18,725
Panaman.....	72		72
Peruvian.....	4,187	6,277	10,464
Swedish.....	2,865	8,233	11,098
United States.....	118,314	136,367	254,681
Total, July, 1921.....	321,763	328,605	650,368
Total, June, 1921.....	331,420	279,071	610,491
Total, July, 1920.....	295,519	407,432	702,951
Tolls levied against commercial vessels passing through the Canal, by nationality:			
British.....	\$153,563.26	\$149,948.83	\$303,512.09
Chilean.....	2,263.75	4,510.00	6,773.75
Danish.....	19,428.61	12,430.00	31,858.61

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Tolls levied against commercial vessels passing through the Canal, by nationality—Continued:			
Dutch.....	\$8,740.00	\$8,757.50	\$17,497.50
French.....	10,627.50	5,235.60	15,863.10
Italian.....	5,876.25	7,561.25	13,437.50
Japanese.....	41,626.80	21,302.55	62,929.35
Mexican.....	433.65		433.65
Norwegian.....	9,267.21	8,555.25	17,822.46
Panamanian.....	51.75		51.75
Peruvian.....	3,118.75	4,623.75	7,742.50
Swedish.....	2,810.00	8,398.75	11,208.75
United States.....	147,412.65	167,959.45	315,372.10
Total, July, 1921.....	405,220.18	399,282.93	804,503.11
Total, June, 1921.....	410,829.32	335,421.05	746,250.37
Total, July, 1920.....	364,740.49	477,571.56	842,312.05
Tons of cargo carried by commercial vessels passing through the Canal, by nationality:			
British.....	94,119	145,731	239,850
Chilean.....	420	695	1,115
Danish.....	7,051	21,520	28,571
Dutch.....	4,811	13,156	17,967
French.....	205	4,000	4,205
Italian.....	700	2,804	3,504
Japanese.....	39,236	29,148	68,384
Mexican.....	10		10
Norwegian.....	5,400	820	6,220
Peruvian.....	609	4,284	4,893
Swedish.....	2,181	15,861	18,042
United States.....	103,698	212,523	316,221
Total, July, 1921.....	258,440	450,542	708,982
Total, June, 1921.....	359,584	335,136	694,720
Total, July, 1920.....	398,317	488,497	886,814
A further classification of the above commercial traffic:			
Cargo-carrying vessels—			
Laden.....	87	92	179
Ballast.....	10	6	16
Trawlers.....	3		3
Yachts.....	2		2
Warships.....	2	3	5
Cable repair ship.....	1		1
Total commercial vessels.....	105	101	206
Tonnage of above vessels, Panama Canal net measurement:			
Cargo-carrying vessels—			
Laden.....	375,512	377,179	752,691
Ballast.....	26,299	30,383	56,682
Trawlers.....	261		261
Yachts.....	29		29
Cable repair ship.....	950		950
Displacement tonnage—			
Warships.....	16,040	5,744	21,784
Tolls paid on above ships:			
Cargo-carrying vessels—			
Laden.....	\$374,223.30	\$374,267.75	\$748,491.05
Ballast.....	21,777.63	22,143.18	43,920.81
Trawlers.....	37.50		37.50
Yachts.....	21.75		21.75
Warships.....	8,020.00	2,872.00	10,892.00
Cable ship.....	1,140.00		1,140.00
Total tolls, commercial vessels.....	\$405,220.18	\$399,282.93	\$804,503.11
Motor ships through the Canal			
Panama Canal net tonnage of above.....	9	7	16
Sailing vessels through the Canal ¹	35,789	17,598	53,387
Panama Canal net tonnage of above.....	6		6
Cargo carried by commercial vessels.....	1,633		1,633
Average rate of tolls per cargo ton ²	258,440	450,542	708,982
Average rate of tolls per cargo ton ¹	\$1.53	\$0.88	\$1.12
	1.44	0.83	1.05

¹ Including 4 trawlers² Including cargo-carrying ships in ballast.³ Laden vessels only.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.¹

The following statement shows the tonnage of, and amount of cargo carried by United States Government vessels passing through the Panama Canal during the month of July, 1921. This traffic passes through the Panama Canal free of tolls; if tolls had been assessed against these vessels, however, at commercial rates, the amounts collected would have been as indicated below.

In this statement is also included the number and tonnage of launches transiting the Canal, together with tolls collected thereon. Although paying tolls they are included in the noncommercial traffic, being small nonseagoing vessels of under 10 tons measurement.

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States Navy vessels:			
Battleships.....	3		3
Cruisers.....		1	1
Gunboats.....	1	1	2
Submarines.....		2	2
Submarine chasers.....	3	3	6
Tug.....		1	1
Colliers.....		2	2
Total naval vessels.....	7	10	17
United States Army vessels:			
Mineplanter.....		1	1
Launch.....	1		1
Total Army vessels.....	1	1	2
Vessels chartered to carry Government supplies.....	3	1	4
Panaman Government vessels.....	2	3	5
Total vessels through Canal free of tolls.....	13	15	28
Tonnage of above vessels:			
Displacement tonnage—			
Naval vessels.....	88,117	6,907	95,024
Panama Canal net tonnage—			
Naval vessels.....		13,099	13,099
Army vessels.....	10	403	413
Vessels with Government supplies.....	10,184	5,259	15,443
Panaman Government vessels.....	90	30	120
Total Panama Canal net tonnage.....	10,284	18,791	29,075
Cargo carried by above vessels:			
Naval vessels.....		2,200	2,200
Vessels with Government supplies.....	15,684	668	16,352
Total cargo through Canal free of tolls.....	15,684	2,868	18,552
Tolls which above vessels would have paid if assessed at commercial rates:			
Naval vessels.....	\$44,058.50	\$18,497.50	\$62,556.00
Army vessels.....	7.20	290.16	297.36
Vessels with Government supplies.....	10,226.70	6,310.80	16,537.50
Panaman Government vessels.....	64.80	21.60	86.40
Total.....	54,357.20	25,120.06	79,477.26
Launches through the Canal.....	2	1	3
Net tonnage of above, Panama Canal measurement.....	5	1	6
Tolls collected on above.....	\$5.55	\$0.75	\$6.30

¹ Vessels, barges, tugs, launches, etc., in the service of The Panama Canal are not included in this statement of traffic.

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal are shown in the following tabulation:

	Cristobal.	Balboa.	Total.
Vessels passing through the Canal:			
Commercial.....	105	101	206
United States Government vessels.....	11	12	23
Panaman Government vessels.....	2	3	5
Launches (under 10 tons).....	2	1	3
Total vessels and craft.....	120	117	237

	Cristobal.	Balboa.	Total.
Tonnage of above vessels:			
Panama Canal net measurement—			
Commercial vessels.....	403,051	407,562	810,613
United States Government vessels.....	10,194	18,761	28,955
Panama Government vessels.....	90	30	120
Launches.....	5	1	6
Displacement tonnage—			
Commercial vessels.....	16,040	5,744	21,784
United States Government vessels.....	88,117	6,907	95,024
Cargo carried by above vessels:			
Commercial..... tons..	258,440	450,542	708,982
United States Government vessels..... tons..	15,684	2,868	18,552
Total cargo through the Canal..... tons..	274,124	453,410	727,534
Deck cargo included in the above..... tons..	459	3,252	3,711
Vessels entering port but not transiting Canal:			
Number entering.....	53	7	60
Number clearing.....	50	7	57
Registered gross tonnage of above:			
Entering.....	219,729	34,607	254,336
Clearing.....	213,381	34,307	247,688
Registered net tonnage of above:			
Entering.....	137,318	23,176	160,494
Clearing.....	133,389	22,876	156,265
Vessels transiting the Canal and handling passengers or cargo at port:			
Number entering.....	50	49	99
Number clearing.....	47	50	97
Registered gross tonnage of above:			
Entering.....	225,036	200,889	425,925
Clearing.....	124,062	201,192	325,254
Registered net tonnage of above:			
Entering.....	130,817	129,992	260,809
Clearing.....	124,062	129,210	253,272
All vessels entering and clearing, including those transiting the Canal:			
Entering.....	254	220	474
Clearing.....	247	232	479
Registered gross tonnage of above:			
Entering.....	1,371,457	1,200,621	2,572,078
Clearing.....	1,309,877	1,255,811	2,565,688
Registered net tonnage of above:			
Entering.....	914,961	807,326	1,724,287
Clearing.....	869,090	840,482	1,709,572
Transit cargo arriving..... tons..	741,260	728,422	1,469,682
Transit cargo clearing..... tons..	706,795	749,748	1,456,543
Local cargo arriving..... tons..	22,700	2,906	25,606
Local cargo shipped..... tons..	2,129	383	2,512
Cargo received for transshipment..... tons..	24,438	101	24,539
Cargo transhipped..... tons..	28,925	8	28,933
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received..... tons..	41,494	3,176	44,670
Dispatched..... tons..	26,177	491	26,668
Rehandled..... tons..	2,522	676	3,198
Stevedored..... tons..	25,466	2,466	27,912
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	65	8	73
Panama Railroad vessels.....	7		7
United States Army vessels.....	2	1	3
Total vessels supplied with bunker coal.....	74	9	83
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	22,139	2,015	24,154
Panama Railroad vessels..... tons..	1,218		1,218
United States Army vessels..... tons..	87	31	118
Total coal supplied to vessels..... tons..	23,444	2,046	25,490
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	796	99	895
Panama Railroad departments..... tons..	495		495

	Cristobal.	Balboa.	Total.
Coal issues, miscellaneous—Continued.			
United States Army, excepting vessels..... tons..	307		307
Individuals and companies..... tons..	423		423
Total coal furnished from Panama Canal deposits..... tons..	25,465	2,145	27,610
Coal on hand, August 1, 1921..... tons..	111,354	14,688	126,042
Coal on hand, July 1, 1921..... tons..	127,850	16,833	144,683
Coal received during July, 1921..... tons..	8,969		8,969
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels..... tons..	1,708	570	2,278
Coal on hand, August 1, 1921..... tons..	61,345	14,899	76,244
Coal on hand, July 1, 1921..... tons..	63,053	15,469	78,522
Fuel oil issues, miscellaneous:			
To Panama Canal departments..... bbls..	4,197	17,577	21,774
To Panama Railroad..... bbls..	611	189	800
To Army and Navy..... bbls..	708	241	949
Total issues..... bbls..	5,516	18,007	23,523
Transferred to pipe line..... bbls..	276		276
Fuel oil on hand, August 1, 1921..... bbls..	86,257	101,448	187,705
Fuel oil on hand, July 1, 1921..... bbls..	92,049	93,941	185,990
Loaned to United States Shipping Board..... bbls..		4,437	4,437
Received from United States Shipping Board..... bbls..		29,951	29,951
Diesel oil issued during the month..... bbls..	248	50	298
Transferred to pipe line..... bbls..	71		71
Diesel oil on hand, August 1, 1921..... bbls..	51,614	976	52,590
Diesel oil on hand, July 1, 1921..... bbls..	51,933	1,026	52,959
Oil pumped for individuals and companies..... bbls..	199,400	63,124	262,524
Miscellaneous transfers..... bbls..	7,508		7,508
Total oil handled..... bbls..	213,019	81,181	294,200
Vessels furnished with commissary supplies:			
Commercial, other than Panama Railroad.....	124	52	176
Panama Railroad.....	8	1	9
United States Government.....	8	14	22
Total vessels furnished supplies.....	140	67	207
Commissary sales to commercial vessels:			
Ice.....	\$2,863.24	\$917.95	\$3,781.19
Wholesale groceries.....	3,607.31	1,563.07	5,170.38
Wholesale cold storage.....	18,743.43	6,956.42	25,699.85
Laundry.....	3,717.52	1,050.92	4,768.44
Miscellaneous.....	1,226.52	440.15	1,666.67
Total.....	30,158.02	10,928.51	41,086.53
Commissary sales to Panama Railroad vessels:			
Ice.....	\$48.20		\$48.20
Wholesale groceries.....	921.45	\$8.13	929.59
Wholesale cold storage.....	3,503.28		3,503.28
Laundry.....	1,192.90		1,192.90
Miscellaneous.....	402.90	34.80	437.70
Total.....	6,068.74	42.93	6,111.67
Commissary sales to United States Government vessels:			
Ice.....	\$32.85	\$496.92	\$529.77
Wholesale groceries.....	367.47	6,302.19	6,669.66
Wholesale cold storage.....	1,686.77	15,116.57	16,803.34
Laundry.....	21.99	7.29	29.28
Miscellaneous.....	158.81	217.77	376.58
Total.....	2,267.89	22,140.74	24,408.63
Total commissary sales to all vessels:			
July, 1921.....	\$38,494.65	\$33,112.18	\$71,606.83
June, 1921.....	47,070.85	39,407.43	86,478.28
July, 1920.....	122,382.48	69,590.11	191,972.59
Admeasurement certificates:			
United States equivalent issued or made.....	22	4	26
Measured for Panama Canal.....	9	9	18
United States equivalent or Panama Canal corrected.....	29	10	39
Services of harbor equipment:			
Tugs, total operating hours.....	489	399	888
Launches, total operating hours.....	1,229	1,270	2,499

	Cristobal.	Balboa.	Total.
Vessels repaired at Panama Canal shops:			
Commercial—			
Steamships	38	17	55
Motorships	3	1	4
Battleship		1	1
Cruiser		1	1
Yacht		1	1
Trawler	1		1
Noncommercial—			
Submarines	2	2	4
Tugs	2		2
Steamships	1		1
Minesweeper	1		1
Subchaser		1	1
Launches	5	1	6
Barges	2		2
Totals	55	25	80
Vessels dry-docked:			
Commercial—			
Steamers	2	3	5
Cruiser		1	1
Noncommercial:			
Tugs	3		3
Barges	2		2
Subchaser		1	1
Dredge		1	1
Totals	7	6	13
Services to American vessels:			
Crews shipped	1		1
Crews paid off	1		1
Shipping articles written	1		1
Marine notes of protest entered	23	4	27
Services to American seamen:			
Seamen shipped	212	28	240
Seamen discharged	115	62	177
Seamen lodged and subsisted	23	13	36
Seamen repatriated	15	14	29
Seamen deserted	16	7	23
Seamen deceased		1	1
Wages of American seamen:			
Total wages earned	\$15,766.83	\$2,958.54	\$18,725.37
Deductions approved by Deputy Shipping Commissioner	4,485.70	609.47	5,095.17
Balance due seamen	11,281.13	2,349.07	13,630.20
Paid to seamen	9,263.59	1,445.11	10,708.70
Received on deposit for seamen	2,017.54	903.96	2,921.50
Clearances issued	129	117	246
Bills of health issued	129	126	255
<i>Movement of passengers.</i>			
Disembarking at Canal ports:			
First class—			
From Atlantic ports	1,039	2	1,041
From Pacific ports	151	143	294
Total, first class	1,190	145	1,335
Other than first class—			
From Atlantic ports	879	3	882
From Pacific ports	37	105	142
Total, other than first class	916	108	1,024
Total disembarking at Canal ports	2,106	253	2,359
Embarking from Canal ports:			
First class—			
For Atlantic ports	1,516		1,516
For Pacific ports	211	125	336
Total, first class	1,727	125	1,852
Other than first class—			
For Atlantic ports	826		826
For Pacific ports	82	162	244
Total, other than first class	908	162	1,070
Total embarking from Canal ports	2,635	287	2,922

	Cristobal.	Balboa.	Total.
Remaining on board vessels:			
First class—			
Bound from Atlantic to Pacific ports.....	627	739	1,366
Bound from Pacific to Atlantic ports.....	350	489	839
Bound from Atlantic to Atlantic ports.....	263		263
Bound from Pacific to Pacific ports.....		49	49
Total, first class.....	1,240	1,277	2,517
Other than first class—			
Bound from Atlantic to Pacific ports.....	1,778	1,805	3,583
Bound from Pacific to Atlantic ports.....	272	305	577
Bound from Atlantic to Atlantic ports.....	68		68
Bound from Pacific to Pacific ports.....		786	786
Total, other than first class.....	2,118	2,896	5,014
Total remaining on board.....	3,358	4,173	7,531
Total passengers arriving.....	5,464	4,426	9,990
Total passengers departing.....	5,993	4,460	10,453
Departures in excess of arrivals.....	529	34	563

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of July, 1921, as compared with that of the preceding month, and of the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	97	98	195	7	8	15	210
Pedro Miguel.....	100	102	202	21	17	38	240
Miraflores.....	100	102	202	20	15	35	237
Total lockages, July, 1921.....	297	302	599	48	40	88	687
Total lockages, June, 1921.....	263	312	575	36	49	85	660
Total lockages, July, 1920.....	348	313	661			75	736

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	102	110	212	29	20	49	261
Pedro Miguel.....	102	108	210	47	34	81	291
Miraflores.....	102	108	210	47	33	80	290
Total vessels, July, 1921.....	306	326	632	123	87	210	842
Total vessels, June, 1921.....	271	326	597	82	119	201	798
Total vessels, July, 1920.....	356	334	690			75	765

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	22	21	25
Canal equipment.....	27	60	55
Total noncommercial vessels.....	49	81	80

The consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	785,760,000	790,720,000	732,030,000
Leakage.....	20,000,000	13,730,000	67,000,000
Maintenance.....			
Total consumption, July, 1921.....	805,760,000	804,450,000	799,030,000
Total consumption, June, 1921.....	778,640,000	690,620,000	754,580,000
Total consumption, July, 1920.....	946,740,000	838,050,000	773,280,000

METEOROLOGY AND HYDROGRAPHY.

The rainfall for the month of July, 1921, was above normal everywhere except over the northern part of the Pacific section, the Pequeni branch of the Chagres Valley, the upper Trinidad arm of Gatun Lake and the Atlantic coast. Totals ranged from 4.32 inches at Taboga to 20.71 inches at the Chilibrillo station. The greatest amount of precipitation recorded on any 1 day was 3.29 inches at Monte Lirio on the 16th. The estimated rainfall over Gatun Lake watershed area was 13.31 inches, as compared with an 11-year mean of 11.55 inches; while over the Chagres River watershed area above Alhajuela it was 13.92 inches, as compared with a 20-year mean of 14.81 inches.

The discharge of the Chagres River at Alhajuela was 2,547 c. f. s., being 10 per cent below the 20-year July mean of 2,840 c. f. s., and furnished 37 per cent of the Gatun Lake total yield. The maximum momentary discharge was 13,700 c. f. s. at elevation 98.19 feet on the 7th, and the minimum discharge was 1,400 c. f. s. There were 2 rises of 5 feet or over at Alhajuela during the month.

The Gatun Lake watershed total yield for the month was 6,902 c. f. s., being 1 per cent above the 11-year July mean of 6,862 c. f. s. The maximum total yield for the month of July, of record, was 10,967 c. f. s. in 1915; while the minimum total yield was 2,677 c. f. s. in 1914. The net yield for the month was 6,454 c. f. s. The lake varied in elevation from 84.27 feet on the 1st to 86.42 feet on the 31st, an increase in elevation of 2.15 feet, with an increase in storage of 9.75 billion cubic feet, which is the second largest month of storage accumulation on record, having been exceeded in July, 1920, with 12.57 billion cubic feet.

The draft on the lake for lockages and power was 2,123 c. f. s. as compared with 2,140 c. f. s. for last month, and 2,295 c. f. s. for July, 1920. The ratio of water expended for power and lockages was 2.61 to 1. Four spillway operations were made at Gatun during the month.

The Gamboa pumping plant and the Brazos Brook reservoir drew 39.2 and 38.5 millions of cubic feet, respectively, from the lake.

Miraflores Lake varied in elevation from 51.80 feet to 54.00 feet, and ended at elevation 53.78 feet, midnight, the 31st. Sixteen spillway operations were made at the Miraflores spillway during the month.

No seismic tremors were recorded during the month.

Temperature records for the month of July are given below:

	Maximum.	Minimum.	Monthly mean.
Balboa Heights.....	91	70	80.5
Gamboa.....	92	69	79.8
Alhajuela.....	91	67	78.8
Gatun.....	88	73	80.2
Colon.....	89	72	80.8

The following gives a comparison of the monthly rainfall by sections for July, 1920, and July, 1921:

Section.	Rainfall.		Rainy days.	
	1921.	1920.	1921.	1920.
	<i>Inches.</i>	<i>Inches.</i>		
Pacific.....	7.93	9.00	19	22
Central.....	14.10	15.01	26	25
Atlantic.....	12.42	16.83	28	26

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., is shown in comparative form in the following tabulation:

	July, 1921.	June, 1921.	July, 1920.
Gross output, KWH:			
Gatun hydroelectric station	5,541,190	5,294,930	5,994,200
Mirafleres steam plant	590	7,750	15,330
Combined gross output	5,541,609	5,302,650	6,009,530
Water consumption	cubic feet ..		
Oil consumption	barrels ..		
	4,110,077,816	4,108,884,000	4,438,210,000
	2,006	1,990	2,125
Power distributed to consumers	KWH ..		
Loss of power in plant auxiliaries, transmission and transformation	KWH ..		
Per cent of loss of power to gross output			
	4,601,656	4,404,350	4,948,356
	939,944	898,300	1,051,174
	17.00	16.94	17.65

Miscellaneous repairs and installations of electrical equipment were made on 49 vessels during the month, 23 at Cristobal and 26 at Balboa. There were 429 work orders issued for work to be performed by the Electrical Division during the month of July, as compared with 437 for June.

The following new construction work was under progress during the month, with completion on July 31, as shown:

	Per cent completed.	
	June 30.	July 31.
Installation of new 8,400 KVA transformer and new tie-line equipment at Gatun substation ..	70	75
Installation of 2 complete feeder equipments at the Balboa substation	95	95
Extension of new underground distribution in New Cristobal	99	100
Installation of electrical equipment at hydroelectric station	45	50

SHOP, FOUNDRY AND DRY DOCK WORK.

At the Balboa shops, miscellaneous repairs were made on 25 vessels, 6 of which were placed in dry dock. The more important repair work consisted of the following:

The steamship *Panama* was dry-docked for reboiling and general overhaul, including the renewal of a considerable amount of steel work in her hull. After the work was well under way, it was interrupted on July 23 until a decision could be reached by the Secretary of War as to whether to proceed with the repairs, or secure another Government vessel to replace the *Panama*. On July 30, word was received to proceed with the work, but owing to the extremely limited funds available, it will be possible to carry out only the most needed repairs on the vessel, in addition to renewing the boilers.

The French cruiser *Jules Michelet* was placed in dry dock and temporary repairs were made to the damaged portion of her hull to insure water-tightness until permanent repairs can be made. The damage to her hull was just below the junction of the protective deck with the shell, where the steel work is somewhat complicated, rendering permanent repairs awkward to such an extent that they could not be made within the limited time available.

Repairs to the submarine *R-25* were completed during the month. After the main motors had been removed from the *R-24*, a cable was received from the United States, announcing the decision of the Navy Department to repair the motors of the *R*-type submarines in the United States, and directing the replacing of the motors for departure of the vessel. The motors were replaced and the remaining work on the vessel completed. The above decision of the Navy Department applies to all of the *R*-type submarines in this vicinity.

In addition to not receiving the repair work on the various *R*-boats, the steamship *Katrina Luckenbach*, which at one time promised to develop a fair-sized job on her turbines, was towed to the United States for repairs at the builders' works. The order to suspend work on the steamship *Panama* came on top of this, so that it became necessary, on half an hour's notice, to furlough about one-half of the employees of the Balboa plant until a decision could be reached on the steamship *Panama*.

At the Cristobal shops, miscellaneous repairs were made on 55 vessels, 7 of which were dry-docked. The more important repair work consisted of the following:

The bearings of both engines of the steamship *Katrina Luckenbach* were opened up for examination, and 2 rotary bearings in the starboard engine and 2 high-speed pinion bearings, starboard engine, were renewed.

The steamship *Cauca* was docked, the bottom cleaned and painted, stern gland packed, sea inlets cleaned, pin hole in tank top welded, and new checks on port boiler fitted.

Two 6-inch cast iron low pressure gate valves, two 6-inch cast iron low pressure elbows, and four 6-inch low pressure screwed pipe flanges were supplied to the steamship *Solano*.

The installation of bulwarks on port and starboard sides, caulking of bulkheads between Nos. 1 and 2 tanks, and overhauling of main engines and other miscellaneous repairs were started on the motor ship *Linda*.

The tug *Tavernilla* was docked and the bottom cleaned and painted; boat deck was caulked, grooves in towing bitts aft electric welded, rudder removed, and shaft trued up and bushing and gland renewed.

The output of the Mechanical Division in patterns, castings, and foundry production for July, 1921, as compared with the preceding month, was as follows:

	July, 1921.			June, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	10	872	57,596	7	339	40,608
Steel.....	7	51	38,813	2	451	57,302
Brass.....	10	442	8,279	25	1,271	22,341

The routine inspection, hostling, and repair of equipment for the Panama Railroad Company was carried on during the month. Five hundred and twenty-seven job orders were completed during the month, with 230 remaining incomplected on July 31.

DREDGING DIVISION.

The movement of material over Cucaracha Slide continued during the month, but at a much slower rate than during the preceding month. A dipper dredge worked 10 days in front of this slide, removing in that time 44,150 cubic yards of material. Since February 22, 1920, 2,737,050 cubic yards of material have been removed from this slide.

A general movement occurred in the afternoon of July 14, 1921, in an old slide, on the east side of Gaillard Cut, one-half mile north of Culebra Slide and opposite the barge repair station, carrying a mass of earth and rock into the Canal, amounting to about 185,000 cubic yards. This slide caused such shoaling in the Canal that a channel only 120 feet wide and 30 feet deep along the west bank was available for the passage of vessels. Two dipper dredges worked the remainder of the month in front of this slide, removing 149,450 cubic yards of material. No serious inconvenience to canal traffic and only a few hours' delay to vessels were occasioned by this slide, and no further movement has occurred since the above date.

The total excavation in July, including earth and rock, was 451,700 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment.
	Earth.	Rock.			
10,700	1,600	9,100	Maintenance.....	<i>Gaillard Cut, Cucaracha Slide.</i> 1805-00 to 1814-00 E.....	<i>Paraiso.</i>
33,450	5,650	27,800	Maintenance.....	1805-00 to 1814-00 E.....	<i>Gamboa.</i>
75,150	20,350	54,800	Maintenance.....	<i>Gaillard Cut—E, Barge Repair Slide.</i> 1746-00 to 1756-50 E.....	<i>Paraiso.</i>
74,300	22,300	52,000	Maintenance.....	1746-00 to 1756-50 E.....	<i>Cascadas.</i>
4,000	800	3,200	Maintenance.....	<i>Gaillard Cut—W, Barge Repair Slide.</i> 1738-00 to 1739-00 W.....	<i>Paraiso.</i>
13,800	5,800	8,000	Maintenance.....	<i>Pacific Entrance, Miraflores P. I.</i> 2109-00 to 2115-00 W.....	<i>Paraiso.</i>
10,300	2,300	8,000	Maintenance.....	<i>Pacific Entrance.</i> 2298-00 to 2306-00 W.....	<i>Cascadas.</i>
95,000	95,000		Maintenance.....	2065-00 to 2105-00 E.....	<i>No. 84.</i>
10,000	10,000		Maintenance.....	2065-00 to 2105-00 E.....	<i>No. 84.</i>
125,090	125,000		Maintenance.....	2188-50 to 2219-00 W.....	<i>No. 86.</i>
				2135-00 to 2149-40 W.....	<i>No. 86.</i>
				2159-60 to 2171-00 W.....	<i>No. 86.</i>
451,700	288,800	162,900			

The material excavated at the various stations, was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	210,450
Flats, west of Canal.....	115,000
Arsenal fill.....	65,000
San Juan fill.....	50,000
At sea, Pacific entrance.....	10,300
North of Gold Hill.....	950
Total.....	451,700

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations, and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	July, 1921.	June, 1921.	July, 1920.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	734,425,000	703,156,500	774,598,950
Filtration plants.....	449,527,000	431,750,000	471,023,000
Water consumed by Panama City.....	90,690,000	94,137,000	86,491,000
Water consumed by Colon.....	55,490,000	57,934,250	52,230,500
Sales of water to vessels.....	9,709,842	10,039,282	12,814,322

Construction work, as itemized below, was under progress during the month, with completion on July 31 as shown:

	Per cent completed.	
	June 30.	July 31.
Municipal work, New Cristobal townsite:		
Grading.....	55	55
Roads.....	97	97
Water lines.....	72	72
Sidewalks.....	86	86
Sanitary sewers.....	75	75
Installation of two 12-inch oil lines, to Pier 6, Cristobal.....	70	100
New wash water tank, Miraflores.....	95	95
Construction of new concrete sea wall, Santo Tomas Hospital.....	36	43
Construction of sewer and water lines, Southern Avenue, Panama City.....	50	50
Extension of roads, New Santo Tomas Hospital.....	6	6
Storm drains, Santo Tomas Hospital.....	50	100
Sewer construction, Santo Tomas Hospital.....	50	100
Concrete roof, low service reservoir.....	20	52
Grading, Silver City, Mount Hope.....		45
Storm sewer, Balboa.....		97
Storm drains, buildings 3 and 4, Balboa shops.....		20

* Work discontinued by direction of the Auditor.

Municipal work performed for the Army and Navy is separately reported.

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	Men.	Women.	Children.	Totals.		
				July, 1921.	June, 1921.	July, 1920.
Americans.....	2,832	2,049	2,399	7,280	7,515	8,241
Europeans.....	141	29	68	238	213	224
West Indians.....	5,130	2,590	5,249	12,969	12,602	10,637
Totals, July, 1921.....	8,103	4,668	7,716	20,487		
Totals, June, 1921.....	8,008	4,686	7,646		20,340	
Totals, July, 1920.....	8,657	4,042	6,403			19,102

WORKING FORCE—NUMBER OF EMPLOYEES.

The following tabulation shows the number of gold employees, as of July 20, by departments, together with a comparison of the working force of the preceding month, and that of the corresponding month of last year:

Department or division.	Employees.		Totals.		
	Gold.	Silver.	July, 1921.	June, 1921.	July, 1920.
Operation and Maintenance:					
Office.....	32	33	65	81	78
Electrical Division.....	183	186	369	413	513
Municipal Engineering Division.....	88	777	865	850	1,314
Lock Operation.....	169	569	738	732	758
Dredging Division.....	157	745	902	922	1,324
Mechanical Division.....	642	1,066	1,708	1,645	2,733
Marine Division.....	185	533	718	709	614
Fortifications.....	56	292	348	242	303
Totals.....	1,512	4,201	5,713	5,594	7,637

Department or division.	Employees.		Totals.		
	Gold.	Silver.	July, 1921.	June, 1921.	July, 1920.
Supply Department:					
Quartermaster.....	226	1,421	1,647	1,753	3,847
Subsistence.....	30	277	307	332	438
Commissary.....	229	1,172	1,401	1,405	1,997
Cattle Industry, Plantations.....	16	143	159	173	542
Hotel Washington.....	11	86	97	91	111
Totals.....	512	3,099	3,611	3,754	6,905
Accounting Department.....	209	7	216	235	265
Health Department.....	242	851	1,093	1,093	1,117
Executive Department.....	546	233	779	822	778
Totals.....	997	1,091	2,088	2,150	2,151
Panama Railroad:					
Superintendent.....	62	347	409	393	691
Transportation.....	90	124	214	219	333
Receiving and Forwarding Agency.....	68	894	962	753	1,287
Coaling Stations.....	108	578	686	678	1,230
Totals.....	328	1,943	2,271	2,043	3,511
Grand totals, July, 1921.....	3,349	10,334	13,683		
Grand totals, June, 1921.....	3,506	10,035		13,541	
Grand totals, July, 1920.....	4,600	15,614			20,214

* Including employees of former Building Division.

VITAL STATISTICS.

A total of 180 deaths occurred during the month of July, 1921, among the population of the Canal Zone and the cities of Panama and Colon, giving an annual death rate of 17.27 per thousand. Of the total deaths, 10 were due to external causes.

Of the above deaths, 76, or 42 per cent, occurred among children under 5 years of age.

The leading causes of death were pneumonia, tuberculosis, and diarrhea and enteritis.

There were 15 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

Three hundred and nine live births were reported during the month and 17 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 31.28 per thousand population. Deaths among children under 1 year of age numbered 59, giving an infant mortality rate, based on the number of births reported for the month, of 190.94 per thousand.

One hundred and fifty-three cases of malaria were reported during the month, divided as follows: 24 employees, 89 soldiers, and 40 nonemployees; of these, 38 were contracted outside the Canal Zone.

There were 6 cases of typhoid fever reported, 3 in Panama, 2 in the Canal Zone, and 1 nonresident. There was 1 death, a white American employee, from typhoid fever. There were 3 cases of smallpox reported and no deaths.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, as compared with the preceding month, and the corresponding month of last year, were as follows:

	July, 1921.	June, 1921.	July, 1920.
Material received on U. S. requisitions during the month, chargeable as follows:			
Operation and Maintenance.....	\$233,899.82	\$398,824.99	\$665,453.81
Construction and equipment.....	286.40	7,743.71	44,886.77
Miscellaneous departments.....	9,434.67	18,099.09	25,250.89
Totals.....	243,618.89	424,667.79	745,691.47

	July, 1921.	June, 1921.	July, 1920.
Cash sales on the Isthmus:			
Stock.....	\$36,324.40	\$29,560.31	\$59,152.93
Fuel oil (including sales to steamships).....	993.60	66.47	124,742.81
Serap.....	728.95	609.39	1,952.69
Obsolete and second-hand material.....	3,040.20	3,756.51	3,018.83
Totals.....	41,087.15	33,992.68	198,466.66
Sales to steamships from storehouses:			
Miscellaneous stock items.....	17,594.80	13,361.82	30,554.07
Fuel oil.....	993.60		119,372.63
Totals.....	18,588.40	13,361.82	149,926.69

Respectfully,

JAY J. MORROW,
Governor.

Shipment of Raisins on Motor Ship "Kennecott."

In her passage through the Canal on August 20, en route from San Francisco to New York, the motor ship *Kennecott* carried 350 tons of dried raisins. This shipment was made by the California Associated Raisin Company on the motor ship for the purpose of testing this means of transportation, and the traffic manager of the company was quoted in the *Shipping Register* of San Francisco as saying that he anticipated it would be entirely satisfactory. In an article on the shipment the periodical makes the following comparison of the costs of shipping raisins from Fresno to Atlantic seaboard cities by rail and by ship through the Canal:

"FRESNO TO ATLANTIC SEABOARD CITIES."

	Per 100 pounds.	Per car of 30 tons.
Present all-rail rate.....	\$1.66½	
War tax.....	.05	
	1.71½	\$1,029.00
Proposed all-rail rate.....	1.25	
War tax.....	.04	
	1.29	774.00
Present water rate:		
Fresno to San Francisco.....	.35	
San Francisco to Atlantic ports.....	.55	
War tax, unloading, insurance, and tolls.....	.10	
	1.00	600.00

"Thus it appears that shippers of dried fruit are saving at the present time \$429 per car of 30 tons, and the saving to shippers via the Canal even after the railroads cut their transcontinental rate on dried fruits to \$1.25 will still amount to \$174 per car. When it is considered that California's dried fruit output reaches into thousands of cars annually, the saving is almost staggering. The actual saving on the 350 tons on the *Kennecott* is \$4,719."

Notice to Mariners.—Bocas del Toro Anchorage.

THE PANAMA CANAL, BALBOA HEIGHTS, C. Z., August 25, 1921.

CIRCULAR NO. 643-92:

The master of the steamship *Metapan* reports under date of August 23, that "Pillar Tree," a land mark shown on all charts by which anchorage in Bocas del Toro is made, is no longer visible, having either been blown down or fallen from decay. Owing to dangerous reefs at this point, caution should be exercised when anchoring.

JAY J. MORROW,
Governor.

Projected Pacific-European Service of American-Hawaiian Line.—Increased Coastwise Sailings.

The *Shipping Register* of San Francisco, published in its issue of August 6 the following statement from Williams, Dimond & Company, Pacific Coast agents for the American-Hawaiian Steamship Company, operated by the United American Lines:

"The American-Hawaiian Steamship Company, operated by the United American Lines, will begin a fortnightly service between the Pacific Coast and Europe with American-Hawaiian steamers, commencing in October with the sailing of the *Alaskan*. A regular schedule will be published as soon as possible. This schedule will be even closer than that of the European-Pacific Line, now operated on this coast by Williams, Dimond & Company.

"Beginning in September, there will be a weekly service from New York to the Pacific Coast by steamers of the American-Hawaiian Steamship Company. This service will include a fortnightly service from Philadelphia to the Pacific Coast, and the fortnightly sailings from Boston to the Pacific Coast will be continued.

"A regular service between all Pacific Coast ports of the United States and ports of the Atlantic seaboard of the United States and also with European ports will be maintained. Westbound from New York there will be a sailing every week to the Pacific Coast, every 2 weeks from Boston, and every 2 weeks from Philadelphia. Eastbound from the Pacific Coast, there will be a sailing every 2 weeks to Atlantic ports and to Europe.

"The American-Hawaiian Steamship Company has 16 large freighters which it has ready to put on this service. In addition, it has placed orders for the two largest American-built motor ships now under construction at the Merchant's Shipbuilding Company, in Bristol, Pa. These will be of 10,500 deadweight ton capacity, and will be powered with Burnmeister-Wain Diesel engines."

Three Men in 28-foot Yawl Arrive from New York.

The *Hippocampus*, a 28-foot auxiliary yawl which reached the Canal recently from New York, by way of Cuban and Jamaican ports, will lie in Gatun Lake until next March or April, when her owner will set out for west coast ports as far as Puget Sound. Her owner and master is Mr. Alfred F. Loomis, associate editor of a motor-boating magazine, who has been voyaging with two companions, Messrs. Paul Squib and John A. Chambers, for the pleasure of the thing and to obtain material for stories. They were 3½ months coming from New York, and as winter would be on them before they could complete their voyage at the leisurely rate they had planned, the yawl will be tied up at the Canal through the winter.

The *Hippocampus* travels ordinarily under sail, but is equipped with a 10-horsepower gasoline motor, with which she can make about 5 knots in calm weather.

Cable Line to San Juan, Porto Rico.

The All-America Cables, Inc., announces the opening, on August 29, of their new cable from Guantanamo Bay, Cuba, to San Juan and Ponce, Porto Rico. This gives direct cable communication to San Juan and Ponce from the Canal Zone and the United States, as the company's line between Cristobal and New York touches at Guantanamo.

Cargo of Guano from Ocean Island.

The steamship *Hokkai Maru*, passing through the Canal on August 2, carried a full cargo of guano, amounting to 5,450 tons, consigned to an English port.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, July, 1921.

FROM—	NORTH AMERICA.										EUROPE.										Grand total.	Per cent of total cargo.
	UNITED STATES.					NORTH AMERICA.					EUROPE.											
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	East coast of Canada.	Total, North America.	British Isles.	Denmark.	France.	Germany.	Holland.	Italy.	Spain.	Sweden.	Danzig.	Europe. ²	Total, Europe.	East coast, South America.		
SOUTH AMERICA:																						
Chile	16,072	3,407	7,523	27,002		172		27,174	10,499		2,865	11		1,900	13			14,347	29,635		56,809	12.7
Colombia	1,819			1,819		1,569		3,388										390	403	14	3,402	0.7
Ecuador	1,848			1,848		1,722		3,570	4,364		70	6		191	100			483	5,214		3,073	0.9
Peru	1,310			1,310		3,751		5,061										316	759		10,275	2.3
West coast of South America ²	1,331			1,331		953		2,284						443							3,043	0.7
Total, South America	22,380	3,407	7,523	33,310		8,167		41,477	14,863		2,935	19		2,534	124			15,536	36,011		77,502	17.2
NORTH AMERICA:																						
West coast of United States	48,030	8,994	658	57,682	3,336	123	3,246	61,141	82,886	7,464		7,635	16,091	7,320		1,063	5,199	33,654	161,312	194,222	647	49.5
West coast of Canada	2,086			2,086				5,332	1,423		370							1,434	3,227	8,559	1,9	
West coast of Central America	365	400	82	847	204	2,877		3,928				13			10	428		543	994		4,922	1.1
Total, North America	50,481	9,394	740	60,615	3,540	3,000	3,246	70,401	84,309	7,464	370	7,648	16,091	7,320	10	1,491	5,199	35,631	165,533	194,236	128	52.5
ASIA:																						
China	10,210			10,210				10,210		41									41		10,251	2.2
Japan	2,342			2,342				2,342				3							3		2,345	0.5
Philippine Islands	23,985			23,986				23,986													23,986	5.3
Far East ²	575			575				575	2,350										2,350		2,925	0.6
Malay Peninsula	353			353				353													353	0.1
Total, Asia	37,466			37,466				37,466	2,350	41		3							2,394		39,860	8.8
AUSTRALASIA:																						
Australia									12,730										12,730		12,730	2.8
New Zealand	40			40				40	43,477										43,477		43,517	9.6
Australasia ²									7,500										7,500		7,500	1.7
Total, Australasia	40			40				40	63,707										63,707		63,747	14.1
HAWAII																						
	20,305		13,000	33,305				33,305													33,305	7.4
Grand totals	130,672	12,801	21,263	164,736	3,540	11,167	3,246	182,689	165,229	7,505	3,305	7,670	16,091	9,854	134	1,491	5,199	51,167	267,645	208,450	542	100.0
Per cent of total cargo, July, 1921	29.0	2.8	4.7	36.5	0.8	2.5	0.7	40.5	36.7	1.7	0.7	1.7	3.5	2.2	0.1	0.3	1.1	11.4	49.4	0.1	100.0	
Per cent of total cargo, June, 1921	29.1	11.4	3.6	44.1	1.7	4.1		49.9	30.1	0.6	0.4	4.2	0.4	5.2	0.1	0.4		5.9	49.0	0.2		

² Figures represent tons of 2,240 pounds.² General cargo not routed so as to allow segregation between definite parts.

From—	SOUTH AMERICA.					NORTH AMERICA.						ASIA.				AUSTRALASIA.				Grand totals.	Per cent of total cargo.		
	Chile.	Colombia.	Ecuador.	Peru.	West coast, South America. ¹	Total, South America.	West coast, United States.	Canada.	West coast, Central America.	Balboa, C. Z.	West coast, Mexico.	Total, North America.	China.	Japan.	Far East. ²	Total, Asia.	Australia.	New Zealand.	Total, Australasia. ²			Hawaii.	
NORTH AMERICA:																							
North Atlantic ports	802	23	67	4,142	2,595	7,629	48,045	265	1,220	950	...	50,480	629	11,381	10,523	22,533	6,016	10,224	7,828	24,068	5,663	110,373	42.7
South Atlantic ports	...	...	...	...	1,593	1,593	1,105	...	...	...	...	1,105	213	2,092	7,723	10,028	...	4,099	...	4,099	...	13,232	5.9
Gulf ports	...	...	...	...	...	...	13,300	...	...	...	...	13,300	7,730	15,803	14,695	38,228	...	...	...	...	...	53,121	20.5
Total, United States	802	23	67	4,142	4,188	9,222	62,450	265	1,220	950	...	64,885	8,572	29,276	32,941	70,789	6,016	14,323	7,828	28,167	5,663	178,726	69.1
East coast of Mexico.	14,069	...	...	...	...	14,069	8,000	...	4,545	...	10	12,555	...	...	...	...	...	...	...	...	...	26,624	10.3
Atlantic terminus, Panama Canal.	283	43	183	44	1,029	1,582	1,400	...	2,550	...	883	4,833	...	...	...	...	51	215	130	396	...	6,415	2.5
Canada	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	396	0.1
Total, North America	15,154	66	250	4,186	5,217	24,873	71,850	265	8,315	950	893	82,273	8,572	29,276	32,941	70,789	6,067	14,538	7,958	28,563	5,663	212,161	82.0
EUROPE:																							
Belgium	...	...	...	...	...	...	11,970	...	...	...	...	11,970	...	...	...	...	...	...	...	...	...	11,970	4.6
British Isles	2,817	...	...	...	71	2,888	4,538	707	...	...	...	5,245	...	...	...	...	...	10,846	...	...	...	21,779	8.5
Denmark	...	...	...	...	...	...	2,961	...	...	...	...	2,961	...	...	...	...	...	...	...	...	...	2,961	1.2
France	394	...	6	15	192	607	...	...	...	...	...	369	...	...	...	...	...	...	...	...	...	607	0.2
Germany	...	...	...	...	3,220	3,220	369	...	...	...	...	1,591	...	...	...	...	...	...	...	...	...	3,589	1.4
Holland	...	...	...	...	...	...	...	...	...	...	...	1,591	...	...	...	...	...	...	...	...	...	1,591	0.6
Italy	...	...	...	...	8	692	700	125	...	...	...	125	...	...	...	...	...	...	...	...	...	825	0.3
Spain	...	...	...	...	20	125	125	...	...	...	...	125	...	...	...	...	...	...	...	...	...	145	0.1
Sweden	...	...	46	80	...	126	47	...	...	...	...	47	...	...	...	...	...	...	...	...	...	173	0.1
Europe ¹	...	...	75	75	1,690	1,840	130	...	...	...	...	130	...	...	...	...	...	...	...	...	...	1,970	0.8
Total, Europe	3,211	...	127	269	8,594	12,201	20,265	2,298	...	...	...	22,563	...	...	...	...	...	10,846	...	...	...	45,610	17.8
East coast of South America	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Grand totals	18,365	735	377	4,455	13,811	37,743	92,115	2,563	8,315	950	893	104,836	8,572	29,276	32,941	70,789	6,067	25,384	7,958	28,409	5,663	258,440	100.0
Per cent of total cargo, July, 1921.	7.2	0.3	0.1	1.7	5.3	14.6	35.6	1.0	3.2	0.4	0.3	40.5	3.3	11.3	12.8	27.4	2.4	9.8	3.1	15.3	2.2	100.0	...
Per cent of total cargo, June, 1921.	11.7	0.4	0.1	2.0	5.5	19.7	30.3	8.3	2.0	2.0	1.8	44.4	8.1	10.6	6.4	25.3	1.6	3.9	5.1	10.6	...	...	...

¹ Figures represent tons of 2,240 pounds.

² General cargo not routed so as to allow segregation among various ports.

³ 5,742 tons railroad material from Gulf ports to Alaska.

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, August 27, 1921.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Florence Luckenbach	21	7 18	21	11 55	21	19 32	21	20 40	American.	Luckenbach Line.	401.0	52.0	14.0	Norfolk	San Francisco.	Ballast.		6,002	4,638
enbach									American.	United States Navy.	256.0	35.0	16.6	Bluefield	Bahia.				
Dolphin	22	15 44	23	6 10	23	12 47	23	17 00	British.	Bank Line.	412.0	55.0	27.0	New York.	Yokohama.	Oil and general.	8,478	6,899	4,863
Luxette	22	19 15	23	8 16	23	13 55	23	19 35	American.	MacCormick & McPherson (S. B.)	426.0	56.0	17.0	Cristobal	San Francisco.	Ballast.	8,391	6,019	
Manay	23	3 10	23	8 16	23	13 55	23	19 35	British.	Pacific Steam Navigation Co.	216.0	35.0	11.6	General	Guayaquil.	General.	72	1,337	884
City of Pekin	23	11 34	23	10 58	23	20 39	23	21 35	British.	Ellerman Line, Ltd.	443.0	59.0	27.6	New York.	Yokohama.	General.	7,404	6,048	6,846
Santa Rosa	23	6 00	23	11 20	23	20 40	25	12 19	Costa Rican.	Costa Rican Navigation Co.	70.0	12.5	6.0	Port Limon.	Punta Arenas.	Steel products.	6,484	7,538	5,448
Steel Exporter.	23	16 50	24	6 30	24	14 47	24	15 55	American.	United States Steel Products Co.	424.0	56.0	24.3	New York.	Seattle.	Ballast.	5,200	3,600	3,429
Vancouver.	23	18 15	24	7 32	24	15 47	24	16 58	British.	Vancouver Steamship Line.	376.0	50.0	16.3	General	Asiatic.	General.	5,200	3,600	3,429
France Maru.	23	14 37	24	8 00	24	16 56	24	18 00	Japanese.	Kolishiiki Kabushiki Kaisha.	381.0	51.0	22.8	General	Yokohama.	General.	5,200	3,600	3,429
Wren.	23	11 35	24	8 35	24	17 06	24	18 00	British.	Ornis Steamship Line.	420.0	54.0	16.0	New Castle.	Portland, Oreg.	Ballast.	3,228	6,351	4,924
Bakersfield.	24	6 10	24	11 15	24	19 29	24	21 00	American.	Williams, Dimond Co. (S. B.)	410.0	54.0	18.0	Forsey, Eng.	Los Angeles.	Oil and general.	2,600	6,101	4,356
Brush.	24	10 45	24	11 50	24	19 46	24	21 00	British.	N. Atl. & West, S. S. Co. (S. B.)	390.0	50.0	15.0	Philadelphia.	Seattle.	General.	3,300	7,130	4,913
Rubens.	24	10 45	24	13 15	24	20 25	24	21 45	British.	Bolton Steamship Co.	407.0	53.0	23.0	London.	Portland.	General.	3,977	6,067	4,230
Minnesota.	24	10 45	24	13 15	24	20 25	24	21 45	American.	American-Hawaiian Line.	385.0	53.0	18.0	New York.	San Francisco.	Ballast.	7,000	6,199	6,250
Kina.	24	21 07	25	6 45	25	14 57	25	16 25	Danish.	Orient Steamship Line.	400.0	52.0	24.6	River, Tine.	Kobe.	Cotton, steel, etc.	70	132	72
Mexico Maru.	25	3 18	25	7 35	25	15 55	25	17 00	Japanese.	Osaka Shosen Kaisha.	400.0	52.0	24.6	Buenos Aires.	Seattle.	General.	271	4,436	2,405
Liberator.	25	20 54	26	6 20	26	14 52	26	15 47	American.	Atl. Gulf and Pacific S. S. Co.	410.0	55.0	25.6	Mobile.	Buenaventura.	General.	70	132	72
Laura C. Hall.	25	22 02	26	6 21	26	14 45	27	8 07	British.	Pacific Metals Corporation.	374.0	46.0	18.2	Cristobal.	Callao.	General.	271	4,436	2,405
Ucayali.	19	21 13	26	6 21	26	14 45	27	8 07	Peruvian.	Peruvian Steamship Line.	385.0	52.0	14.7	New Castle.	San Francisco.	General.	1,774	4,113	3,071
Crosshill.	26	18 50	27	6 35	27	14 58	27	17 03	British.	McGrath, Blackwood & Laurie.	338.0	44.0	18.0	Hamburg.	Guayaquil.	Ballast.	642	1,273	706
Cedre.	27	12 40	27	7 15	27	16 04	27	17 20	Norwegian.	Det. Selmerste Rederi.	292.0	48.0	17.0	Curacao.	Bahia.	General.			
Denver.	27	7 13	27	7 30	27	16 09			American.	United States Navy.	215.0	34.0	14.7	Cristobal.	Champereno.	General.			
Acajutla.	20	15 20	27	9 55	27	18 20	27	20 40	British.	Pacific Steam Navigation Co.	215.0	34.0	14.7	Cristobal.	Champereno.	General.			

^a Cruiser.

^a Launch.

^a Gunboat.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Orestes	20	1 00	21	7 04	21	15 05	22	12 35	Dutch.	Royal Netherlands S. S. Co.	340.0	48.0	19.0	Bahia	London.	General.	3,884	5,895	3,982
Cherry Branch	21	1 00	21	8 00	21	15 30	21	20 22	British.	Naudius Steamship Co.	400.0	51.9	23.0	Portland	Liverpool.	Wheat.	7,600	7,025	5,055
Baltimore Maru	22	9 30	22	10 40	22	18 55	23	18 55	Japanese.	Kanishiki Kaisha Kaw. Zobenjo.	405.0	51.9	23.0	Portland	Cork.	General.	4,250	5,776	4,081
Santa Ana	22	9 30	22	8 22	22	15 43	22	17 55	American.	R. R. Grace & Co.	360.2	51.6	26.0	Talcahuano.	New York.	General.	674	1,187	622
Jaime	22	10 30	22	12 02	22	20 05	23	12 05	British.	Pacific Steam Navigation Co.	220.0	34.0	13.0	Talcahuano.	Pto. Colombia.	General.			
Hippocampus	20	16 23	23	12 02	23	21 30			British.	Alfred F. Loomis	189.0	30.0	9.0	Bahia	Cristobal.	General.			
Saioa	19	16 08	23	7 20	23	15 10			American.	United States Navy	249.4	30.0	5.0	Bahia	Cristobal.	General.			

^a Corn, cocoa, and ivory nuts.

^a Yacht.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the two weeks ended August 27:

Steamships *Depere*, electric-weld broken portion of crosshead nut wrench and reinforce wrench by building up on both sides of handle with electric-welding; *Rakuyo Maru*, manufacture 40 white metal rings for compressor gland of freezer; tug *Empire*, fit one swivel and repair worm gear of towing machine; straighten and overhaul 2 lifeboat davits, and straighten railing aft of lifeboat; steamship *Solana*, dock, stage, and clean and paint bottom; repair hull where damaged; repair sea valves; clean strainers; examine pintles and gudgeons; straighten 4 propeller blades; repack stern gland; repair piston rod stuffing box; repair broken dynamo engine cylinder head; manufacture miscellaneous parts for engineer's department; calk entire boat deck, and renew stern zincs; tug *Gorgona*, furnish air; repair condenser; connect up bilge and repair brine pump; inspect and repair furnaces; launch *Santa Rita*, renew sternpost and refit stern bearing support casting; repair keel and refit skeg casting; renew after-end of shoe; U. S. S. *Dolphin*, dock, stage, and clean and paint bottom; overhaul sea valves and renew zincs; steamship *Cape Henry*, renew burned ceiling in athwartship coal bunker and clean out bilges; paint tank top; barge *No. 13*, dock, stage, and clean and paint bottom; calk tank seams.

PREVIOUSLY REPORTED.

Steamship *Gen. George W. Getty*, miscellaneous engineer's department and hull repairs; tug *Coco Solo*, install new engine; mine planter *Graham*, docking and miscellaneous repairs; launch *P-1*, rebuilding of hull; dredge *Paraiso*, docking and hull repairs; launch *Pacific*, general repairs to hull; steamship *Panama*, reboiling and general overhaul to machinery and hull; tug *Empire*, repair towing machine, lifeboat davits and railing.

The following vessels were at the Cristobal shops for repairs during the two weeks ended August 29:

Steamships *Colon*, miscellaneous repairs and painting to engine, deck and steward departments; *West Isleta*, manufactured, fitted and installed piston rod, complete for main air pump, drilled holes at ends of cracks in bottom of pump cylinder and fitted and installed copper patches over same; manufactured 9 sets of pump valves as sample; manufactured 2 piston rings for H. P. cylinder; U. S. S. *Owl*, repaired pipe for cooling water to distiller, repaired coil for feed water heater, manufactured 2 valve stems for main circulating engine, manufactured 1 valve stem and 1 valve rod for main air pump, trued up crosshead pins, main air pump, etc.; claret *No. 7*, docked and undocked, cleaned and painted bottom, ground in sea valves, renewed bottom uptake; manufactured 2 ash pit doors, repaired whistle valve, patched hull, repaired pipes in boilers; steamship *Killerig*, docked and undocked, cleaned and painted, renewed zincs around stern; barge *No. 2*, docked and undocked, cleaned and painted bottom, repaired hull; steamships *Woron*, *Ucayali*, *St. Andre*, *Steel Worker*, *Tolosa*, and *South American*, minor repairs; *San Juan*, remake joint between H. P. and L. P. cylinders; grind in bottom relief valve from L. P. cylinder main engine; repair fresh water pump in galley; overhaul atmosphere exhaust valve; repair pipe, gents' toilet; repair baker's scales; renew evaporator flow line overboard; repair grease extractor, revolution counter, and cargo winch; U. S. Jr. M. P. *Nones*, get out awnings, seats, awning stanchions, jack stays, ridge poles, sockets, etc.; steamships *Romulas*, renew valves and face valve seats as directed; open H. P. cylinder for examination; *Hampton Roads*, repair valves; steamships *Balboa*, *Venezuela*, *Haiti*, *Heredia*, *Acajutla*, *Harold Walker*, bark *Golden Gate*, motor schooners *Catherine R* and *Laura C. Hall*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *Eagle No. 31*, overhaul sea valves and zincs, etc.; U. S. S. *Eagle No. 4*, renew brickwork in boilers, etc.; motor ship *Satoe*, general overhauling, including dry-docking; barge *No. 117*, renew plates, etc.; U. S. S. *Forse*, miscellaneous repairs including dry-docking; barge *No. 19*, renew plates, etc.; claret *No. 7*, dock and undock, miscellaneous repairs.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending August 27, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Manavi	Pacific Steam Navigation Co.		August 23.		73
Ucalyali	Panama Railroad Steamship Line.		August 26.		277
Colon	Panama Railroad Steamship Line.		August 26.		2,407
Acajutla	Pacific Steam Navigation Co.	August 20.	August 27.	(¹)	
Metapan	United Fruit Co.	August 21.	August 21.	92	36
Sarpfos	Leyland Line.	August 21.	August 21.	34	
Haiti	French Line.	August 22.	August 23.	15	396
Jamaica	Pacific Steam Navigation Co.	August 22.	August 23.	661	
Heredia	United Fruit Co.	August 22.	August 23.	969	489
Columbia	N. O. and S. A. S. S. Co.	August 23.	August 23.	64	
Calamares	United Fruit Co.	August 23.	August 24.	322	349
Harold Walker	Huasteco Petroleum Co.	August 23.	August 23.		9,500
Metapan	United Fruit Co.	August 24.	August 23.	5	4
Tivives	United Fruit Co.	August 24.	August 23.	162	327
Laura C. Hall	Anglo-American S. S. Co.	August 24.	August 26.	55½	56
Turrialba	United Fruit Co.	August 25.	August 23.	2	24
Barbadian	Leyland Line.	August 25.	August 26.	301	168½
Hague Maru	Osaki Steamship Co.	August 26.	August 26.	287	
Point Bonita	Pacific Mail Steamship Co.	August 27.	August 28.	208	6
Gen. G. W. Goethals	Panama Railroad Steamship Line.	August 27.		2,053	
Caribbean	Panama Railroad Steamship Line.	August 27.		500	
Balboa	Panama Railroad Steamship Line.	August 27.		600	

¹ Two packages.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending August 27, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Jamaica	Pacific Steam Navigation Co.	August 22.	August 22.	1	
Manavi	Pacific Steam Navigation Co.	August 23.	August 23.		1
Laura C. Hall	Pacific Metals Transp. Co. Ltd.	August 24.	August 24.	3	
San Juan	Pacific Mail Steamship Co.	August 27.		10	1
Laura C. Hall	Pacific Metals Transp. Co. Ltd.	August 26.	August 26.		32

Whole Cargo of Phosphates from Nauru and Banaba Islands.

The steamship *Keelung*, which passed through the Canal on August 26, was laden with 6,650 tons of phosphates which she had taken on at Nauru and Banaba (Ocean) Islands for the United Kingdom. The *Keelung* had sailed from Adelaide for the islands, which lie to the north-east of Australia, to secure her homeward cargo.

Pullman Reservations Out of New York.

Mr. J. B. Scott, General Eastern Passenger Agent of the Baltimore and Ohio Railroad Company, 1270 Broadway, New York City, has advised the Executive Office that he will honor any requests he may receive by letter or wire from Panama Canal or Panama Railroad employees for Pullman reservations over the Baltimore and Ohio lines out of New York. If requested, one of the system's steamship passenger agents will meet the ship to notify passengers of the reservations made, and otherwise facilitate arrangements.

Reduction in Cable Rates to Buenaventura and Cartagena.

The All-America Cables, Inc., has announced a further reduction in the rates for cable messages from the Isthmus for Buenaventura and Cartagena, Colombia, effective August 27. The new rates are 20 cents per word on commercial messages and 10 cents per word on United States Government messages.

Executive Order.

To Amend the "Rules and Regulations for the Operation and Navigation of the Panama Canal and Approaches Thereto, Including all Waters under its Jurisdiction."

I. By virtue of the authority vested in me under the Panama Canal Act, paragraphs 40, 186, and 195 of the "Rules and Regulations for the Operation and Navigation of the Panama Canal and Approaches Thereto, Including all Waters Under its Jurisdiction," promulgated by the Executive Order of July 9, 1914, are hereby amended to read as follows:

"40. As soon as radio communication can be established with the Canal, vessels should report their names, nationality, length, draft, tonnage, whether or not they desire to pass through the Canal, require coal, provisions, supplies, repairs, to go alongside of a wharf, the use of tugs, probable time of arrival, length of stay in port, or any other matters of importance or interest. If this information has been previously communicated, through agents or otherwise, to the Captain of the Port, it will not be necessary to report by radio; but the probable time of arrival should always be sent to the Captain of the Port."

"186. Steamers while within a harbor must take all precautions to avoid the issue of sparks or excessive smoke. Vessels will be held liable for all damage resulting from neglect of this rule."

"195. All privately owned boats of every description, except those propelled in whole or in part by machinery, shall be registered and numbered; those propelled in whole or in part by machinery shall be registered and certificated. Until these requirements have been complied with, no privately owned craft may operate in Canal Zone waters."

II. This order shall take effect from and after this date.

THE WHITE HOUSE,
July 27, 1921.

WARREN G. HARDING.

(No. 3522.)

The Executive Order above has been published as Panama Canal Circular No. 601-124.

Pacific Mail Steamship Company's New Coastwise Passenger Service.

With the sailing of the steamer *Ecuador* from San Francisco for Baltimore on September 15, the Pacific Mail Steamship Company's San Francisco-Baltimore passenger service will have become regularly established with 3 passenger ships.

In this new service, the Pacific Mail will operate, in addition to the *Ecuador*, the *Colombia* and the *Venezuela*. These last two steamers are already on the new run. It is the endeavor of the company to maintain sailings approximately every 25 days.

The 3 vessels, until recently, have been in the trans-Pacific service and were made available for this new run when the United States Shipping Board turned over various "State" type steamers for the trans-Pacific service.

On this new express service from San Francisco to Baltimore, the ports of call are: Los Angeles Harbor, Manzanillo, San Jose de Guatemala, La Libertad, Corinto, Balboa, Cristobal; Kingston, Jamaica; Habana, Cuba; and Baltimore. The itinerary of the voyage from Baltimore to San Francisco is in the reverse order with the exception that calls at Kingston will only be made when the trade warrants.

The expected times to be made in this service are as follows: From San Francisco to Balboa, 15 days; from Cristobal to Baltimore, 10 days.

With the establishment of Pacific Mail Co.'s passenger service, there are now two coastwise passenger lines through the Canal, as the Matson Navigation Company has a monthly service plying also between San Francisco and Baltimore.

Dogs from the Isthmus Subject to Quarantine at United States Ports.

The Health Department has been notified by the Bureau of Animal Industry of the United States Department of Agriculture that dogs from the Isthmus are subject to quarantine detention before being allowed to enter the United States. This is primarily on account of ticks. All dogs are subject to inspection by an inspector of the Bureau who may, in his discretion, require that any dogs, except the smaller breeds classed as house dogs, be placed in quarantine or subjected to treatment designed to prevent their introducing communicable diseases.

The ports of entry for such dogs are those designated as quarantine stations for the Bureau. On the Atlantic Coast they are Boston, New York, and Baltimore; on the Pacific, San Francisco, Los Angeles, and San Diego.

Deceased and Insane Employees.

The estates of the following deceased or insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

DECEASED.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Clementine Johnson...	40200	Jamaica	Corozal	Health Department...	August 13, 1921.
Leopold Renwick	31993	Grenada	Silver City	Commissary Division...	August 8, 1921.
William Ward	35451	Barbados	Colon	Mechanical Division...	August 16, 1921.
Walter Alva Redman	22030	Barbados	Colon	Panama Railroad	March 1, 1921.
Richard James	38847	Jamaica	Colon	Panama Railroad	August 19, 1921.
Norman Thornhill	32616	Barbados	Colon	Panama Railroad	August 22, 1921.

INSANE.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of commitment.
Beulah B. Eaton	3809	United States	Ancon	Panama Railroad	August 16, 1921.
David Scott	34557	Jamaica	Ancon	Supply Department	August 24, 1921.

Passenger Train Service—Fort Randolph Branch.

PANAMA RAILROAD COMPANY,

OFFICE OF MASTER OF TRANSPORTATION,

BALBOA HEIGHTS, C. Z., August 29, 1921.

CIRCULAR No. 1879:

To all concerned—Effective with the close of business Wednesday, August 31, the present Fort

Randolph branch scheduled passenger trains will be discontinued.

Effective Thursday, September 1, and daily thereafter until new timetable No. 34 becomes effective, extra passenger trains will be run on the Fort Randolph branch with respect to the following time at all points where shown.

P. M.	P. M.	P. M.	A. M.	A. M.	LEAVE	ARRIVE	A. M.	A. M.	P. M.	P. M.	P. M.
4.45	3.15	1.30	10.30	8.30	..... Third Street .....	.....	9.25	11.25	2.25	4.25	5.40
4.47	3.17	1.32	10.32	8.32	..... Seventh Street .....	.....	9.23	11.23	2.23	4.23	5.38
4.49	3.19	1.34	10.34	8.34	..... Cristobal Commissary .....	.....	9.21	11.21	2.21	4.21	5.36
4.52	3.22	1.37	10.37	8.37	..... Tower "B" .....	.....	9.18	11.18	2.18	4.18	5.33
4.58	3.28	1.43	10.43	8.43	..... France Field .....	.....	9.10	11.10	2.10	4.10	5.25
5.04	3.34	1.49	10.49	8.49	..... Coco Solo .....	.....	9.05	11.05	2.05	4.05	5.20
5.10	3.40	1.55	10.55	8.55	..... Fort Randolph .....	.....	9.00	11.00	2.00	4.00	5.15
P. M.	P. M.	P. M.	A. M.	A. M.	ARRIVE	LEAVE	A. M.	A. M.	P. M.	P. M.	P. M.

NOTE—Baggage car having been removed from the above trains, no baggage other than that which is permissible to carry in passenger coaches can be handled on these trains.

W. J. BISSELL, *Acting Master of Transportation.*

APPROVED:

S. W. HEALD, *Superintendent.*

PANAMA RAILROAD PASSENGER TRAIN TIME-TABLE NO. 34, EFFECTIVE SEPTEMBER 4, 1921.

MAIN LINE STATIONS.				DAILY.				MAIN LINE STATIONS.				DAILY.					
				3	5	7					4	6	8				
Leave				A. M.	A. M.	P. M.	Panama				A. M.	A. M.	P. M.	P. M.			
Colon				7 10	11 00	5 00	Balboa Heights				7 10	11 00	5 00	5 05			
Mount Hope				7 15	11 05	5 05	Corozal				7 15	11 05	5 05	5 10			
Fort Davis				7 24	11 14	5 14	Fort Clayton				7 25	11 12	5 14	5 17			
Gatun				7 29	11 19	5 19	Miraflores Locks				7 25	11 16	5 17	5 21			
Monte Lirio				7 44	11 34	5 33	Red Tank				7 28	11 19	5 21	5 25			
Frijoles				7 55	11 45	5 44	Pedro Miguel				7 32	11 22	5 25	5 29			
Darien				8 00	11 52	5 51	Summit				7 36	11 25	5 29	5 33			
Gamboa				8 16	12 04	6 04	Gatun				7 48	11 37	5 37	5 40			
Summit				8 32	12 16	6 16	Fort Davis				8 00	11 49	5 40	5 45			
Red Tank				8 46	12 27	6 26	Colon				8 09	11 59	5 50	5 55			
Miraflores Locks				8 49	12 30	6 28	Arrive				8 17	12 07	6 07	6 10			
Corozal				8 53	12 34	6 32					8 29	12 19	6 18	6 21			
Fort Clayton				8 56	12 37	6 35					8 44	12 34	6 34	6 37			
Panama				9 00	12 41	6 40					8 48	12 38	6 38	6 41			
Arrive				9 05	12 50	6 45					8 55	12 45	6 45	6 48			
				9 10	12 55	6 50					9 00	12 50	6 50	6 53			
				A. M.	P. M.	P. M.					A. M.	P. M.	P. M.	P. M.			

All trains stop where time is shown.																							
MAIN LINE STATIONS.				DAILY.				FORT RANDOLPH BRANCH STATIONS				DAILY.											
				3	5	7					16	18	20	22	24								
Leave				A. M.	A. M.	P. M.	Arrive				A. M.	A. M.	P. M.	P. M.	P. M.								
Colon				7 10	11 00	5 00	Third Street, Colon				9 25	11 25	2 25	4 25	5 40								
Mount Hope				7 15	11 05	5 05	Seventh Street				9 23	11 23	2 23	4 23	5 38								
Fort Davis				7 24	11 14	5 14	Cristal Community				9 21	11 21	2 21	4 21	5 36								
Gatun				7 29	11 19	5 19	Powell Field				9 18	11 18	2 18	4 18	5 33								
Monte Lirio				7 44	11 34	5 33	Rafael Field				9 16	11 16	2 16	4 16	5 31								
Frijoles				7 55	11 45	5 44	Coco Sals Station				9 05	11 05	2 05	4 05	5 20								
Darien				8 00	11 52	5 51	Fort Randolph				9 00	11 00	2 00	4 00	5 15								
Gamboa				8 16	12 04	6 04	Leave				A. M.	A. M.	P. M.	P. M.	P. M.								
Summit				8 32	12 16	6 16					16	18	20	22	24								
Red Tank				8 46	12 27	6 26																	
Miraflores Locks				8 49	12 30	6 28																	
Corozal				8 53	12 34	6 32																	
Fort Clayton				8 56	12 37	6 35																	
Panama				9 00	12 41	6 40																	
Arrive				9 05	12 50	6 45																	
				9 10	12 55	6 50																	
				A. M.	P. M.	P. M.																	

THE PANAMA CANAL RECORD

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American Shipping and the Panama Canal.

During the fiscal year 1921, in spite of the world-wide depression, which resulted in the laying up of hundreds of ships, a new high record for American tonnage was established at the Panama Canal. The number of American ships making the transit was 1,212 out of a total for all nations of 2,892. These figures do not include vessels of the United States Navy or other Government-owned or chartered vessels not engaged in commercial service and exempt from the payment of tolls. The aggregate net tonnage of these 1,212 vessels, measured according to Panama Canal rules, was 4,874,477, and they carried 5,179,350 tons of cargo. The nearest competitor of the United States in Canal traffic was Great Britain with 970 vessels of 3,965,613 net tons, carrying 3,721,932 tons of cargo. American vessels carried 45 per cent of all the cargo passing through the Canal, and British vessels 32 per cent. The continuous increase of American shipping, using the Canal since it was first opened to navigation in August, 1914, is shown by the following table:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915	231	239	470
1916	114	124	238
1917	198	266	464
1918	224	404	628
1919	268	518	786
1920	493	636	1,129
1921	581	631	1,212

The low figures for the fiscal year 1916 are accounted for by the circumstance that the Canal was closed to navigation by slides in the Gaillard Cut from September 18, 1915, to April 15, 1916. Subsequently the traffic was adversely affected by the war. Since the armistice it has grown rapidly and continuously.

The 1921 traffic moved over the trade routes shown in the following table:

AMERICAN SHIPPING USING THE PANAMA CANAL DURING THE FISCAL YEAR 1921; SEGREGATION BY TRADE ROUTES.

	Ships.	Cargo tons.
United States coastwise, Atlantic to Pacific	177	698,429
United States coastwise, Pacific to Atlantic	145	673,959
East coast of United States to west coast of South America	129	419,904
West coast of South America to east coast of United States	152	629,274
Europe to west coast of North America	26	66,709
West coast of North America to Europe	106	736,160
East coast of United States to Far East	68	502,712
Far East to east coast of United States	23	140,260

* This is the fourth of a series of articles on trade through the Panama Canal under various national flags. Those previously published dealt with British, Japanese, and Norwegian trade.

AMERICAN SHIPPING USING THE PANAMA CANAL DURING THE FISCAL YEAR 1921; SEGREGATION BY TRADE ROUTES.—contd.

	Ships.	Cargo tons.
East coast of United States to Australasia.....	13	88,789
Australasia to east coast of United States.....	17	87,385
East coast of Mexico to west coast of North America.....	29	286,311
West coast of North America to east coast of Mexico.....	42	14,455
East coast of Mexico to west coast of South America.....	36	296,342
West coast of South America to east coast of Mexico.....	32	.....
East coast of Mexico to Balboa.....	9	72,452
Balboa to east coast of Mexico.....	11	.....
East coast of Mexico to west coast of Central America.....	1	4,478
East coast of United States to Balboa.....	12	95,606
Balboa to east coast of United States.....	10	.....
East coast of United States to west coast of Canada.....	9	58,846
West coast of Canada to east coast of United States.....	7	32,809
Cristobal to west coast of South America.....	20	2,731
West coast of South America to Cristobal.....	19	15,051
Cristobal to west coast of North America.....	23	29,972
West coast of North America to Cristobal.....	23	14,578
East coast of South America to west coast of North America.....	9	31,927
West coast of North America to east coast of South America.....	3	18,941
Miscellaneous trade routes, Atlantic to Pacific.....	20	37,842
Miscellaneous trade routes, Pacific to Atlantic.....	41	123,338
Totals.....	1,212	5,179,350

Included under "Miscellaneous Trade Routes" in the tabulated statement above are voyages between the West Indies and the west coast of North America, the West Indies and the west coast of South America, the United States and Central America, Cuba and the Far East, the Far East and Europe, the west coast of South America and Europe, the west coast of North America and South Africa and local vessel movements.

THE COASTWISE TRADE.

The most important American trade through the Canal is that from coast to coast, with a cargo tonnage of 1,399,814 carried in 323 vessels. The history of this trade is peculiar. In the first fractional year of Canal traffic (August 15, 1914, to June 30, 1915) it engaged 335 vessels carrying 1,846,658 tons of cargo. During the following year the Canal was closed for 7 months, and in the interval the vessels which had maintained a coastwise service were diverted to war trades in the North Atlantic, where they remained until the close of the war and during the era of high freight rates which followed it. It was only after the slump set in that serious attention was once more given to the development of the trade from coast to coast. It is now growing rapidly, but the figures for 1921, although they show a notable increase over those for 1920 and other recent years, still fall short of the record set in 1915. It is reasonable to assume that if the war had not arrested its normal development the coastwise trade would be far more important than it now is, and that it is capable of great expansion. An interesting and widely advertised feature of the traffic this year was the shipment to eastern markets by sea of a portion of the northwestern apple crop and the California orange crop. There was also a notable increase of lumber shipments from the Pacific Coast.

COMPETITIVE TRADE ROUTES.

The coastwise trade is an American monopoly; but in the other trades served by the Canal, American ships are in competition with the ships of foreign nations, particularly Great Britain, Japan, and Norway. In the important trade between Europe and Australasia American vessels did not figure at all, and in the trade between Europe and the west coast of South America only 4 American vessels passed the Canal, all northbound, with 31,800 tons of cargo. In the oil trade between the Mexican fields and the west coast of South America American tankers carried 296,342 tons out of a total 654,659 tons. With this single exception the trades in which American vessels secured any considerable tonnage had the United States either as origin or destination.

In the trade between Atlantic and Gulf ports of the United States and the west coast of South America the total southbound cargo was 933,261 tons. Of this, American vessels carried 45 per cent, British vessels 15 per cent, Japanese vessels 12 per cent, and Norwegian vessels 7 per cent. Although the trade of other nations has not yet been analyzed in detail, it is probable that the remaining 21 per cent was carried in Chilean and Peruvian bottoms. The northbound cargo aggregated 975,597 tons. American vessels carried 64 per cent of the total, British vessels 14 per cent, Norwegian 10 per cent, and Japanese approximately 5 per cent.

In the trade between Europe and the west coast of North America there is a great preponderance of eastbound cargo. Of this, American vessels carried 55 per cent, British vessels 26 per cent, and Norwegian vessels 4 per cent. Swedish, Danish, and Dutch vessels were also operating over this route, and probably account for most of the remaining 15 per cent. Of the westbound cargo, which was relatively unimportant, American vessels carried 27 per cent, British 14 per cent, and Norwegian 13 per cent.

Of cargo moving from Atlantic and Gulf ports to the Far East, American vessels carried 41 per cent, British vessels 29 per cent, and Japanese vessels 27 per cent. Of cargo moving from the Far East to Atlantic and Gulf ports American vessels carried 32 per cent, Japanese 38 per cent, and British 23 per cent.

In the trade between the United States and Australia, British vessels had a decided advantage, carrying 71 per cent of the total outward bound cargo as against only 14 per cent in American bottoms. Of cargo moving over this route in the opposite direction American vessels carried 56 per cent and British vessels 44 per cent.

Of oil shipments from the Mexican fields to the Pacific Coast north and south of Panama, American vessels carried 60 per cent, and British and Norwegian vessels shared the remainder.

PRINCIPAL AMERICAN LINES.

The United States Shipping Board owned 451 of the 1,212 American vessels which used the Canal in 1921. The more important private owners were: Standard Oil Co. with 128 vessels; W. R. Grace & Co., 94; Pacific Mail Steamship Co., 84; United States Steel Products Co., 53; Panama Railroad Steamship Line, 50; Luckenbach Line, 37; American-Hawaiian Line, 33; Union Oil Co., 25; Standard Transportation Co., 12; Crowell & Thurlow, 12; Robert Dollar Co., 11.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, September 3, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	
Point Bonita	27	8 26	28	6 10	28	14 30	28	15 35	American.	Pacific Mail Steamship Co.	289.0	44.0	17.1	Baltimore.	San Francisco.	General.	2,450	2,895
Katharine E.	27	16 25	28	6 30	28	14 28	28	15 35	American.	Richard T. Robinson.	175.0	24.0	10.6	New York.	San Diego.	Ballast.	1,750	1,993
Begonia	28	4 25	28	7 54	28	16 45	28	15 35	British.	Stoomvaart Navigatie Co.	400.0	52.0	16.0	Liverpool.	Valparaiso.	General.	1,509	408
Oermarsum	28	11 01	28	12 05	28	18 24	28	19 20	Dutch.	Stoomvaart Maatschappij	360.0	48.0	13.0	Glasgow.	Portland, Oreg.	Ballast.	5,733	4,015
Coleman	28	19 28	29	6 35	29	15 09	29	15 53	British.	Harrison Line.	455.0	56.0	24.0	Liverpool.	San Francisco.	General.	5,600	4,714
Romulus	24	22 30	29	8 55	29	16 37	29	23 53	Norwegian.	A. O. Linvig	347.0	50.0	13.6	Norfolk.	Talara.	Ballast.	7,712	5,437
Pennsylvania	30	4 00	30	7 05	30	15 45	30	18 32	American.	United States Navy.	606.0	89.0	30.0	New York.	Balboa.	General.	5,125	3,741
Quilota	28	7 21	30	7 46	30	15 57	30	18 32	British.	Pacific Steam Navigation Co.	361.0	46.0	18.1	New York.	Guayaquil.	General.	212	4,768
Saint Dunstan	29	18 55	30	9 42	30	17 34	30	18 32	British.	Rankin Gilmore & Co.	400.0	53.0	15.0	Liverpool.	San Francisco.	Ballast.	5,880	4,111
Balboa	27	18 30	30	12 15	30	19 07	30	20 00	American.	Colombian Maritime Co.	190.0	29.0	12.6	Cristobal.	Buenaventura.	General.	106	741
Mongolian	30	13 04	30	13 20	30	20 22	30	21 20	British.	Prince Line.	423.0	56.0	18.6	New York.	Vancouver.	Automobiles.	2	6,460
Prinze	30	13 11	31	6 25	31	12 50	31	16 45	American.	W. R. Grace & Co.	360.0	51.0	20.4	New York.	Talcahuano.	General.	1,628	5,694
Santa Luisa	30	13 11	31	8 45	31	16 39	31	17 45	American.	Delco Steamship Co.	328.0	46.0	21.0	Mobile.	San Francisco.	Iron, shell, etc.	4,258	3,975
Columbia	1	2 00	1	8 45	2	14 41	2	18 05	American.	Pacific Mail Steamship Co.	380.0	48.0	24.4	Baltimore.	San Francisco.	General.	2,000	3,705
San Juan	28	14 25	2	6 30	2	14 56	2	17 55	American.	Pacific Mail Steamship Co.	283.0	37.0	18.4	Cristobal.	San Francisco.	General.	2,000	6,015
Arethusa	2	10 10	2	10 35	2	17 58	2	17 58	American.	United States Navy.	343.0	42.0	23.6	Port Arthur.	Balboa.	Fuel oil.	1,699	2,379
Santa Fecla	1	21 20	2	12 44	2	20 25	2	21 20	American.	W. R. Grace & Co.	298.0	40.0	16.0	New York.	Buenaventura.	General.	900	2,835
Varg	1	17 23	2	13 20	2	20 25	2	21 40	Norwegian.	P. Johnsen.	232.0	35.0	11.6	New York.	Tumaco.	General.	30	1,496
Husco	30	17 47	3	6 18	3	14 43	3	15 40	Chilean.	South American Steamship Line.	355.0	44.0	21.0	Cristobal.	Valparaiso.	General.	631	4,552
Manulani	2	22 30	3	7 30	3	15 51	3	17 15	American.	Matson Navigation Co.	480.0	62.0	20.4	New York.	Seattle.	General.	3,000	10,317
Walter A.	3	12 30	3	7 58	3	16 57	3	18 10	American.	Luckenbach Line.	466.0	56.0	23.0	Philadelphia.	Los Angeles.	General.	2,000	8,785
Luckenbach.	3	6 49	3	9 00	3	17 48	3	19 00	Spanish.	Sota & Aznar Steamship Co.	376.0	50.0	15.0	Newport News.	Portland.	Ballast.	5,400	5,224
Itoga Mend.	3	7 11	3	10 05	3	18 42	3	20 30	British.	Dollar Steamship Line.	397.0	52.0	23.2	New York.	Vancouver.	General, sugar.	378	3,934
Harold Dollar.	31	9 26	3	9 35	3	18 50	3	22 20	British.	Pacific Steam Navigation Co.	220.0	34.0	12.4	Cartagena.	Tumaco.	General.	378	1,187
Jamaica.	3	7 44	3	11 25	3	19 36	3	20 45	British.	Canadian Government.	399.0	52.0	26.5	Montreal.	Auckland.	Oil and general.	6,000	6,000
Canadian Mariner	3	7 44	3	11 25	3	19 36	3	20 45	British.	United States Navy.	399.0	52.0	26.5	Montreal.	Auckland.	Oil and general.	6,000	6,000
S. C. 287	3	7 44	3	11 25	3	19 36	3	20 45	American.	United States Navy.	399.0	52.0	26.5	Montreal.	Auckland.	Oil and general.	6,000	6,000

2 Battleship.

3 Tanker.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	
San Juan	27	13 30	28	7 20	28	14 25	28	15 20	American.	Pacific Mail Steamship Co.	283.0	37.0	15.0	San Francisco.	Cristobal.	(4)	873	2,379
Venezuela	28	6 57	28	14 23	28	21 15	29	15 20	American.	Pacific Mail Steamship Co.	380.0	48.0	24.0	San Francisco.	Baltimore.	(5)	4,007	6,033
Piendes	29	8 50	29	10 15	29	18 15	29	22 48	American.	Luckenbach Line.	331.0	47.0	20.0	Tacoma.	Mobile.	General.	2,929	4,147

4 Coffee, hides, cocoa, and general.

3 Beans, canned goods, and rice.

Orons	29	10	25	29	11	08	29	19	30	30	1	23	American	Wessel Duval & Co. (S. B.)	Tallal	New Orleans	Nitrate of soda	6,670	5,667	4,220
Urumbia	29	12	05	29	13	09	29	20	15	4	11	20	Peruvian	Peruvian Line	Callo	Cristobal	(6)	1,173	4,803	2,951
Edward Luckenbach	29	22	45	30	7	25	30	15	30	31	3	35	American	Luckenbach Line	Los Angeles	Philadelphia	General	7,599	8,543	6,427
Victoria Maru	28	13	00	30	9	32	30	19	50	30	19	50	Japanese	Kabushiki Kaisha Kaw Zosaiyo	Portland	London	Wheat	7,226	6,250	4,671
Hoyeisan Maru	30	5	30	30	9	34	30	18	42	30	19	48	Japanese	Mitsui Bussan Kaisha	Portland	Uni el King	Wheat in sacks	7,434	6,189	5,733
Huasco	29	23	20	30	9	38	30	17	47	3	6	18	Chilean	South American Steamship Co.	Talcahuano	Cristobal	General	1,038	4,552	3,182
Rio Grande	30	4	00	30	10	34	30	21	30	31	1	15	Norwegian	Northernfieldste Steamship Co.	Talcahuano	London	General	6,500	5,137	3,767
Pennsylvania	30	21	00	31	7	15	31	15	00	31	15	00	American	American Hawaiian Line	Hilo	Hampton R de	Sugar	9,000	7,107	4,953
Namasket	30	21	30	31	7	15	31	16	35	3	23	30	American	E. C. Evans (S. B.)	Hilo	Southampton	Barley	7,658	6,571	4,803
Eldorado	31	13	00	31	14	31	31	21	26	1	12	50	American	Western Transport Co.	San Francisco	New Orleans	General	1,820	2,439	1,662
Aniston City	1	6	20	1	7	09	1	14	37	1	14	37	American	United States Steel Products Co.	San Francisco	Baltimore	General	6,208	7,539	5,448
Laurel Branch	1	7	50	1	8	42	1	16	25	2	17	35	British	Nautilus Steamship Co.	Seattle	London	Nitrate, metal	5,117	4,182	3,923
San Silvestre	1	23	00	2	7	20	2	15	35	2	17	35	British	Farle Oil Steamship Co.	Valparaiso	Tampico	Ballast	9,207	8,669	5,978
Somersetsshire	2	6	30	2	9	45	2	16	46	3	5	55	British	Libby Brothers & Co.	Vancouver	Hull	General, barley	180	1,651	918
Barina	2	10	30	2	11	42	2	18	15	3	15	55	British	Pacific Steam Navigation Co.	Champerico	Cristobal	General	4,482	11,197	8,322
Rushine	2	19	45	3	7	13	3	15	30	3	22	15	British	New Zealand Shipping Co.	Wellington	England	(7)	6,986	6,755	4,899
West Ira	2	14	32	3	8	14	3	16	30	3	20	00	American	Strubbers & Dixon (S. B.)	Wellington	United King	Barley	6,176	9,943	7,580
Somerset	3	7	40	3	10	10	3	17	45	3	20	00	British	New Zealand Shipping Co.	Bluff	London	(7)			

* Copper, cotton, hides, coffee, etc.

† Frozen meat and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
August 28	Atenas	United Fruit Co.	New Orleans.	August 28	Atenas	United Fruit Co.	Bocas del Toro.
August 28	Camden	United Fruit Co.	Tampico.	August 28	San Pablo	United Fruit Co.	Boston.
August 28	San Pablo	United Fruit Co.	Boston.	August 30	Caribbean	Panama Railroad Cattle Industry.	Cartagena.
August 29	Cartago	United Fruit Co.	New Orleans.	August 31	Camden	United Fruit Co.	Puerto Lobos.
August 29	Pastores	United Fruit Co.	New York.	August 31	Cristobal	Panama Railroad Steamship Line.	Norfolk.
August 30	San Blas	United Fruit Co.	Boston.	August 31	San Blas	United Fruit Co.	Boston.
August 30	Oranje Nassau.	Royal Netherlands W. I. Mail	Amsterdam.	August 31	Atenas	United Fruit Co.	New Orleans.
August 31	Atenas	United Fruit Co.	Bocas del Toro.	August 31	Pastores	United Fruit Co.	New York via Port Limon.
September 1	Ulysses	Panama Railroad Steamship Line.	Norfolk.	August 31	Oranje Nassau.	Royal Netherlands W. I. Mail	Port Limon.
September 1	Royal Netherlands W. I. Mail.	Port Limon.	Port Limon.	September 3	Coronado	Elders & Fyffes, Ltd.	Kingston.
September 3	Alliance	Panama Railroad Steamship Line.	New York via Haiti.				
September 3	Coronado	Elders, & Fyffes, Ltd.	Port Limon.				

* Other than ships passing through the Canal.

August Traffic Highest for Any Month Since March.

Commercial traffic through the Panama Canal in the month of August was greater than it had been during any month since March, 1921. The month of March established a high record in tonnage of vessels and tolls earned; but in the months following March there was a distinct decline, a part of the general business and marine depression over the world.

The extent of this decline in the Canal traffic, and of the recovery in August, is indicated in the following summary of the traffic through the Canal in the past six months:

1921.	Number of ships.	Panama Canal net tonnage.	Registered gross tonnage.	Tolls.	Tons of cargo.
March.....	255	1,112,818	1,417,220	\$1,105,536.55	1,084,563
April.....	227	955,503	1,203,087	927,977.09	907,613
May.....	210	864,617	1,092,602	835,882.77	792,735
June.....	192	761,477	960,857	751,964.12	694,720
July.....	206	810,613	1,022,802	804,503.11	708,982
August.....	236	965,276	1,219,817	955,380.78	839,273

In June, 1921, the tolls were lower than they had been for any month for a year preceding; in June, 1920, the tolls amounted to \$711,159.19, and they have never since been less than that. In tons of cargo carried through the Canal, June, 1921, was the lowest month since November, 1919, when the aggregate cargo was 575,480. July showed a distinct increase, and the traffic in August was about as great as that in October and November of last year.

On the basis of the number of commercial ships making the transit, the traffic in August, 236 ships, was less than the average per month during the fiscal year ending June 30, 1921, in which 2,892 vessels made the transit, an average of 241 per month. The vessels in August, however, were more than the average per month for any other period of 12 months since the opening of the Canal. The month of most ships and greatest quantity of cargo in the history of the Canal was January, 1921, with 279 commercial vessels and 1,177,052 tons of cargo.

March, 1921, exceeded January in tonnage of vessels and in the tolls earned.

The increase of August traffic over the preceding months is due in part to the heavy grain shipments from the west coast of the United States and Canada. Out of a total of 120 vessels passing through the Canal from the Atlantic to the Pacific, 44 were bound to ports on the west coast of the United States and Canada, many of them in ballast; and of 116 vessels transiting the Canal from the Pacific to the Atlantic, 51 had sailed from ports of western United States and Canada, carrying principally grain, canned goods, and lumber.

Nitrate and Coal Cargoes.

In THE PANAMA CANAL RECORD for June 15, 1921, reference was made to the shrinkage of nitrate shipments, which averaged 166,325 tons a month during the calendar year 1920, but declined rapidly from 195,885 tons in January, 1921, to 43,504 tons in May. There was a slight recovery in June, when 58,801 tons passed through the Canal; but in July a new low-water mark was recorded with only 26,051 tons.

Don Alejandro Bertrand, delegate of the Association of Nitrate Producers in Europe, in a report summarized in the *South Pacific Mail* of Valparaiso, submits the following analysis of the situation:

Before 1908 nitrate had but one rival, sulphate of ammonia, with a development very inferior to nitrate. From 1909 to 1913 cyanide and nitrate of calcium began to make their appearance, while at the same time the production of sulphate of ammonia increased much more than that of nitrate. In 1913, in its turn, synthetic ammonia made its appearance, though in a small proportion. In that year nitrate was still dominant.

In 1917 the development of nitrate reached its maximum capacity. Synthetic ammonia was produced to a maximum degree in Germany in 1918. Sulphate of ammonia, extracted from coal, seems to have reached its full development in Germany and the United Kingdom, and especially the United States, while it continues to increase in other countries, notably Australia and Japan. At the present moment the production of chloride of ammonia and other new salts is being encouraged for the purpose of fertilization.

To sum up, nitrate, which represented 56 per cent of the world's total fertilizer production in 1913-1917, has fallen to-day to less than 35 per cent, according to the most favorable calculations, and it seems threatened with a descent to still lower depths in the current year.

If this analysis is correct there would appear to be little reason to expect an early resumption of nitrate shipments on a large scale, especially as importers of nitrate are now overstocked with purchases made at prices higher than current quotations.

The interests of the Panama Canal are affected, not only because nitrate made up one-third of the total northbound cargo in the calendar year 1920, but because the cessation of shipments has had an adverse effect on bulk cargo moving in the opposite direction, notably coal.

Coal shipments to the west coast of South America have declined from 76,157 tons in January, 1921, to 1,664 tons in July. In the same period southbound coal shipments to all destinations have fallen from 110,648 tons to 8,258 tons, for the respective months. After fuel oil, coal has been the most important single commodity moving south through the Canal in bulk. Vessels which carried coal cargoes south usually returned with nitrate, so that the two trades are to a great extent mutually dependent, and the decay of one involves the corresponding decline of the other.

Cargo of 7,600 Tons of Pineapples.

The steamship *Steel Ranger* of the Isthmian Lines (United States Steel Products Co.), bound from Honolulu, via Panapali, passed through the Canal on September 4 with a full cargo of canned pineapples, amounting to 7,600 tons. The pineapples were shipped from Honolulu, and were consigned to Baltimore, Philadelphia, New York, and Boston.

Furness, Withy & Company to Operate Monthly Service Between North Pacific Ports and United Kingdom.

Furness, Withy & Company are to establish a regular service of cargo ships between Pacific Coast ports of Canada and the United States and the United Kingdom. Sailings are to be approximately monthly.

The *Mongolian Prince*, which passed through the Canal on August 30, bound from New York for Vancouver, is due to make the initial homeward voyage in the new service, sailing from Vancouver, via Seattle, Tacoma, and Portland about the end of September.

Luckenbach Company Establishes Gulf-West Coast Service.

The Luckenbach Steamship Company has established a coastwise service through the Canal between Mobile and New Orleans, on the Atlantic, and Los Angeles, San Francisco, Oakland, Astoria, Portland, Seattle, and Tacoma on the Pacific. Sailings are approximately monthly in each direction. The *Frederick Luckenbach* passed through the Canal on August 11, from New Orleans for Los Angeles; and the *Pleiades*, making the opening voyage from the Pacific, passed through the Canal on August 29, bound for Mobile, via Cuban ports and Savannah.

The service between the Gulf ports and the west coast is separate from the old line between the west coast and New York and Philadelphia, which has sailings in each direction about every three weeks.

--- Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended September 3:

Barges *No. 171*, dock, stage, scale bottom, paint bottom to light load line, and repair and renew fenders; *No. 147*, dock, stage, scale bottom, and paint bottom to light load line; *No. 46*, dock, stage, scale bottom, and paint bottom to light load line; *No. 188*, dock, stage, scale bottom, and paint bottom to light load line; tug *Bolivar*, dock, stage, scale bottom, and paint bottom to light load line; steamship *Bogota*, repair main injection valve; dredge *Cascadas*, miscellaneous engine repairs.

PREVIOUSLY REPORTED.

Launch *Santa Rita*, renewal of sternpost and repairs to keel; steamship *Solana*, dock, stage, clean, paint bottom, and miscellaneous engineers' and deck department repairs; launch *P-I*, rebuilding of hull; tug *Gorgona*, miscellaneous repairs; launch *Pacific*, general repairs to hull; steamship *Panama*, reboiling and general overhaul to machinery and hull; tug *Coco Solo*, install new engine; U. S. S. *Dolphin*, dock, stage and clean, and paint bottom; calk tank seams.

The following vessels were at the Cristobal shops for repairs during the week ended September 5:

Steamships *Ulysses*, *Allianca*, *Cristobal*, and *General G. W. Goethals*, miscellaneous repairs to engine, deck, and steward departments; *Urubamba*, furnish men to clean in boiler rooms, etc.; *Namasket*, renew gaskets in gear casing caps and all joints where leaking in oil system; renew and refit keys in flywheel of both ice machines, etc.; barge *S*, dock and undock; clean and paint bottom; repair fender where necessary; renew rivets as necessary; tug *Favorite*, make 24 flue plugs as sample and make 2 pad eyes as sample; steamships *Toedjoe*, manufacture and install bulwarks on both sides of ship; fresh water tanks and ice chest to be shifted to make room for officers' mess accommodations; sea valves to be examined and ground in; valve motion gear to be overhauled; main bearings and main engines to be examined and adjusted, etc.; *Varg* and *Tiga*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *Eagle No. 31*, overhaul sea valves and zincs; motor schooner *Satow*, general overhauling, including dry-docking; claret *No. 7*, miscellaneous repairs including docking; U. S. junior mineplanter *Nones*, manufacturing awnings, stanchions, etc.

--- Coal Bunkering Prices at Various Ports.

Through the courtesy of Messrs. Willard, Sutherland & Co., the following quotations on bunker coal are published. They are quoted as of August, with the understanding that they are simply an indication of prices current at the time the lists were made up, and are subject to change or withdrawal without notice:

Coal Bunkering Prices at Foreign Ports as of August 3, 1921.

Adelaide, 45/6 to 50/6 according to point of delivery.
 Aden, 90/. Indian and/or South African.
 Albany, Australia, 55/.
 Algiers, 60/. Best American or Welsh. 55/ from August 22.
 Alicante. Upon application.
 Amsterdam, 29 Fl. Durham coal.
 Almeria. Upon application.
 Antwerp, 52/6. Welsh or Saar Valley.
 Azores, 80/.
 Bahia, 97/6.
 Bahia Blanca, 84/.
 Balboa, \$17.
 Barbados, 77/.
 Barcelona. Upon application.
 Batavia, Fl. 47.50 to 67.50, according to quality and point of delivery.
 Bermuda, \$15.
 Bilbao. Upon application.
 Bombay, Rs. 44/ on April 2.
 Brake, 67/ to 71/ according to description.
 Bremen, 67/ to 71/ according to description.
 Bremerhaven, 67/ to 71/ according to description.
 Brisbane, Australia, 18/2 to 24/4, according to quality and point of delivery.
 Brixham, 60/. Denaby coal.
 Buenos Aires, 80/.
 Cairns, Australia, 65/.
 Cape Town, 51/9 to 55/9, according to quality.
 Cadiz. Upon application.
 Cardiff, 38/6.
 Cartagena. Upon application.
 Colombo, 60/3 to 87/3, according to quality.
 Colon, \$15.
 Constantinople, 70/, American; 60/, Turkish.
 Copenhagen, 65/.
 Corubian. Upon application.
 Corunna. Upon application.
 Curacao, D. W. I., \$15.75.
 Dakar, 67/6.
 Dartmouth-Portland, 57/6. Dominion or North Country coal.
 Delagoa Bay, 41/6. Screened round coal.
 Dover, 62/6. Durham.
 Drontheim. Upon application.
 Dunkirk, 141 francs.
 Dublin, 81/ (on July 20).
 Emden, 67/ to 71/, according to description.
 Falmouth, 60/.
 Fowey, 62/6, Welsh (54/ from August 17).
 Fremantle, 55/.
 Geestemunde, 67/ to 71/.
 Gibraltar, 60/ plus 1/ export tax (55/ from August 22).
 Glasgow, 37/ to 40/, according to quality.
 Gothenborg, Kr. 65.
 Grimsby, 45/ to 46/.
 Hamburg, 53/6.
 Havre. Upon application.

Coal Bunkering Prices at United States and Canadian Ports as of August 15, 1921.

New York, N. Y., \$6.25, Valona coal, f. a. s. ex lighters; \$7.25, Varden coal, f. a. s., ex lighters.
 Philadelphia, Pa., and Baltimore, Md., \$5.35, Valona coal, f. o. b. under chutes at coal piers; \$5.85, Varden coal, f. o. b. under chutes at coal piers.
 Newport News, Va., Sewalls Point, Va., and Lamberts Point, Va., \$5.60, pools 1 and 2 or equal f. o. b. under chutes at coal piers.
 Portland, Me., \$9.50 t. i. b. ex lighters; \$8 t. i. b. alongside suppliers' wharf.
 Boston, Mass., \$10 t. i. b. ex lighters.
 Wilmington, N. C., \$11 f. o. b. ex lighters.
 Charleston, S. C., \$7 f. o. b. piers.
 Savannah, Ga., \$7 f. o. b. piers.
 Jacksonville, Fla., \$10.50 t. i. b. alongside suppliers' wharf.
 Tampa, Fla., \$10.50 t. i. b. alongside suppliers' wharf.
 Pensacola, Fla., \$5.75 high grade Black Creek, \$5.50 Cahaba, \$5.25 Pratt, f. o. b. and trimmed.
 Mobile, Ala., \$6 high grade washed Black Creek f. o. b. under chutes.
 New Orleans, La., \$7.65 Sipsey, \$7 Warrior River, \$6.90 Pratt R/M, t. i. b. ex lighters.
 Galveston, Tex., \$12 t. i. b. ex lighters alongside Galveston Wharf Co. wharves.
 Holtenau. Upon application.
 Hook of Holland, 28.50 Fl. Durham coal.
 Huelva. Upon application.
 Hull, 45/ to 46/.
 Karachi, 24 rupees.
 La Plata, 80/.
 Las Palmas, 66/.
 Leith, 36/ to 39/.
 Liverpool, 42/ to 46/.
 London-Gravesend, 61/. Durham.
 Madeira, 66/.
 Malta, 67/6. Welsh.
 Marseilles, 180 fcs. French.
 Mauritius, 80/.
 Melbourne, 40/ to 43/ according to point of delivery.
 Montevideo, 80/.
 Newcastle, Australia, 26/3.
 Newcastle, U. K., 33/ to 39/, according to quality.
 Newport, 38/6.
 Nordenham, 67/ to 71/, according to description.
 Oran, 65/.
 Padang, Fl. 40.64.
 Pernambuco, 97/6.
 Piraeus, 70/.
 Plymouth, 57/6. North Country.
 Port Kembla, 35/3.
 Port Natal, 41/3 to 42/9, according to quality.
 Port Pirie, 41/ to 42/6.
 Port Said, 80/. British or American.
 Port Talbot, 38/6.
 Pulo Laut, S. E., Borneo, Fl. 35.56.
 Queensborough. Upon application.
 Rio de Janeiro, 90/.
 Rosario, 82/6.
 Rotterdam, 27 Fl. Durham coal.
 St. Lucia, 77/.
 St. Thomas, V. I., 70/, from August 5.
 St. Vincent, C. V. I., 67/6.
 Sandnessjoen. Upon application.
 Santos, 92/6.
 Singapore, 70/ to 102/6, according to quality.
 Surabaya, Fl. 47.50 to 67.50, according to quality and point of delivery.
 Southampton, 65/. Welsh or North Country.
 Swansea, 38/6.
 Sydney, Australia, 32/.
 Sydney Harbor, Australia, 25/3.
 Tarragona. Upon application.
 Teneriffe, 66/.
 Townsville, Australia, 59/ to 65/, according to point of delivery.
 Trieste. Upon application.
 Trinidad, 76/.
 Trondhjem. Upon application.
 Valencia. Upon application.
 Vlaardingen. Upon application.
 Far Eastern ports. Upon application.

CANADIAN PORTS.

Union Bay, Vancouver, \$9.21. Comox steam coal f. o. b. under chutes at coal piers.
 Halifax, \$10.75 t. i. b. ex lighters.
 North Sydney, N. S., \$8 under chutes plus 25 cents trimmed.
 Sydney-Louisburg, \$8 t. i. b.
 Pictou, N. S., \$7.50 t. i. b. at suppliers' pier.
 Montreal-Quebec, \$9.75 t. i. b. at suppliers' dock.
 St. John's, N. F., \$18.25 screened North Sydney coal f. o. b.
 St. John, N. B., \$10.75 t. i. b.

Commercial Traffic through the Panama Canal in August, 1921, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>United States coastwise:</i>							<i>Long tons.</i>
United States.....	19	69,818	86,278	107,565	68,529	\$81,734.17	55,387
<i>From United States to Far East:</i>							
Japanese.....	8	31,678	35,089	46,032	31,133	38,785.15	40,921
British.....	6	24,770	33,955	39,426	24,674	30,962.50	41,725
United States.....	4	18,553	21,212	25,822	17,762	23,191.25	29,808
Totals.....	18	75,001	90,256	111,280	73,569	92,938.90	112,454
<i>From Europe to west coast of United States:</i>							
British.....	12	38,024	47,734	56,914	35,753	37,170.38	684
United States.....	2	8,642	11,186	13,677	8,641	8,053.92	
Danish.....	1	4,567	4,618	5,973	4,585	5,541.60	
Dutch.....	1	3,132	3,468	3,684	2,209	2,496.96	
Norwegian.....	1	1,188	1,328	2,068	1,172	956.16	
Totals.....	17	55,553	68,334	82,316	52,360	54,219.02	684
<i>From Cristobal, C. Z. to west coast of South America:</i>							
British.....	6	2,777	3,627	4,880	2,970	3,471.25	951
Peruvian.....	3	3,708	7,750	12,325	6,031	4,635.00	562
Chilean.....	2	3,260	5,645	6,367	3,888	4,075.00	1,824
United States.....	1	336	350	615	372	420.00	106
Totals.....	12	10,081	17,372	24,187	13,261	12,601.25	3,443
<i>From Europe to west coast of South America:</i>							
British.....	6	21,373	28,654	35,973	22,238	26,716.25	10,751
Norwegian.....	2	6,142	6,178	8,153	6,105	7,425.60	5,395
Danish.....	1	4,257	5,317	6,645	4,244	5,321.25	3,421
French.....	1	3,600	4,146	5,765	3,681	4,500.00	124
Dutch.....	1	2,224	3,607	3,623	2,229	2,780.00	3,809
Totals.....	11	37,596	47,902	60,159	38,497	46,743.10	23,500
<i>From United States to west coast of South America:</i>							
United States.....	7	16,527	21,284	27,384	16,665	20,655.05	9,936
Norwegian.....	2	3,795	5,220	5,201	3,174	4,468.32	81
British.....	2	3,092	4,549	5,964	3,274	3,865.00	932
Totals.....	11	23,414	31,053	38,549	23,113	28,988.37	10,949
<i>From Europe to Australasia:</i>							
British.....	6	36,133	42,837	52,300	33,067	44,684.00	16,266
<i>From United States to Australasia:</i>							
British.....	3	15,641	18,941	24,672	15,666	19,551.25	16,850
United States.....	1	4,497	4,524	5,840	4,497	5,428.80	8,000
Swedish.....	1	4,004	4,249	4,594	3,452	5,005.00	6,300
Totals.....	5	24,142	27,714	35,106	23,615	29,985.05	31,150
<i>From United States to Balboa, C. Z.:</i>							
United States.....	4	15,261	17,564	22,618	15,115	19,073.25	19,114
<i>From Europe to west coast of Canada:</i>							
British.....	2	8,945	11,771	14,305	9,019	9,120.48	5,600
United States.....	1	3,458	4,924	5,546	3,458	4,322.50	3,228
Totals.....	3	12,403	16,695	19,851	12,447	13,442.98	8,828
<i>From Mexico to west coast of South America:</i>							
United States.....	1	4,203	5,041	6,703	4,203	5,253.75	10,000
British.....	1	3,916	4,546	6,233	3,948	4,895.00	7,716
Totals.....	2	8,119	9,587	12,936	8,151	10,148.75	17,716
<i>Foreign ships in ballast between United States coastwise ports:</i>							
British.....	2	6,875	7,759	8,579	5,678	5,618.25	
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	790
United States.....	1	336	350	615	372	420.00	20
Totals.....	2	950	972	1,753	974	1,166.40	810
<i>From Cristobal, C. Z., to Central America:</i>							
British.....	2	1,429	1,624	2,731	1,463	1,786.25	1,112
<i>From east coast of Mexico to Balboa, C. Z.:</i>							
United States.....	1	4,695	5,940	7,641	4,678	5,868.75	9,000

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>From east coast of United States to west coast of Canada:</i>							<i>Long tons.</i> 2
British.....	1	3,722	4,735	5,880	3,725	\$4,652.50	
<i>From east coast of South America to Far East:</i>							
Japanese.....	1	3,645	4,230	5,761	3,556	4,566.25	3,977
<i>From West Indies to west coast of Canada:</i>							
British.....	1	3,571	4,143	5,443	3,363	4,463.75	2,000
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	1	1,862	2,206	3,169	1,862	2,327.50	1,560
<i>Costa Rican coastwise:</i>							
Costa Rican.....	1	25	18	28	18	18.75	
Totals, August, 1921....	120	394,295	487,219	607,852	387,071	465,017.24	317,970
Totals, July, 1921.....	105	324,330	403,051	508,670	321,763	405,220.18	258,440
Totals, August, 1920....	143	407,933	492,504	622,073	396,312	493,418.85	539,954

PACIFIC TO ATLANTIC.

<i>From west coast of United States to Europe:</i>							<i>Long tons.</i>
Japanese.....	9	38,633	41,438	54,442	37,678	\$47,568.75	66,634
United States.....	7	28,039	36,360	44,827	29,068	35,048.75	54,971
Danish.....	3	12,999	15,419	19,265	13,048	16,248.75	25,071
Norwegian.....	2	7,338	8,480	10,568	6,711	9,077.35	13,779
British.....	2	7,093	8,196	9,582	6,113	8,822.05	13,743
Totals.....	23	94,102	109,893	138,684	92,618	116,765.65	174,198
<i>United States coastwise:</i>							
United States.....	23	94,653	110,899	139,713	93,903	118,316.25	129,792
<i>From west coast of South America to east coast of United States:</i>							
United States.....	8	20,669	26,263	34,075	20,810	25,836.25	32,758
British.....	3	7,730	10,683	14,501	9,527	9,662.50	7,417
Japanese.....	1	3,360	4,446	5,446	3,311	4,200.00	6,814
Norwegian.....	1	1,507	1,479	1,493	873	1,774.80	728
Totals.....	13	33,266	42,871	55,515	34,521	41,473.55	47,717
<i>From Australasia to Europe:</i>							
British.....	10	52,511	60,685	77,220	48,498	65,276.85	49,427
Japanese.....	1	3,000	3,462	4,449	2,743	3,750.00	5,450
Totals.....	11	55,511	64,147	81,649	51,241	69,026.85	54,877
<i>From west coast of South America to Cristobal:</i>							
British.....	4	1,578	2,051	2,711	1,705	1,972.50	896
Peruvian.....	3	4,010	8,315	12,666	6,614	5,012.50	4,867
Chilean.....	2	3,274	5,759	6,438	3,852	4,092.50	1,559
United States.....	2	672	700	1,230	744	840.00	1,168
Totals.....	11	9,534	16,825	23,045	12,915	11,917.50	8,490
<i>From west coast of South America to Europe:</i>							
British.....	5	23,374	27,639	38,098	23,856	29,217.50	19,965
Norwegian.....	2	5,606	7,123	6,940	4,179	6,823.45	11,756
French.....	1	4,368	4,369	5,248	3,329	5,242.80	6,482
Chilean.....	1	2,754	3,442	5,961	2,981	3,442.50	3,355
Dutch.....	1	1,598	3,083	2,652	1,619	1,997.50	4,067
Totals.....	10	37,700	45,656	58,899	35,964	46,723.75	45,625
<i>From Far East to east coast of United States:</i>							
Japanese.....	3	12,458	15,870	19,893	12,261	15,572.50	22,224
United States.....	1	4,101	4,758	6,517	4,045	5,126.25	7,084
Totals.....	4	16,559	20,622	26,410	16,306	20,698.75	29,308
<i>From Balboa, C. Z., to Mexico:</i>							
United States.....	3	13,234	15,435	20,650	12,760	11,113.20	
<i>From west coast of Canada to Europe:</i>							
Dutch.....	2	9,723	12,134	15,306	9,595	12,153.75	17,702
<i>From Australasia to east coast of United States:</i>							
British.....	2	3,645	4,514	5,961	3,852	4,556.25	1,585
<i>From west coast of United States to Cristobal:</i>							
United States.....	2	3,194	3,799	5,321	3,170	3,992.50	2,473

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>From west coast of Central America to Cristobal:</i>							<i>Long tons.</i>
British	2	1,288	1,398	2,298	1,304	\$1,610.00	1,195
<i>From Balboa, C. Z., to east coast of United States:</i>							
United States	1	7,216	8,063	9,332	7,071	5,805.36	
<i>From west coast of United States to east coast of Mexico:</i>							
British	1	4,134	5,035	6,684	4,051	3,625.20	
<i>From west coast of Canada to east coast of United States:</i>							
United States	2	6,026	7,304	9,072	5,957	7,413.55	5,962
<i>From west coast of South America to east coast of Mexico:</i>							
British	1	3,391	4,274	5,999	3,684	3,077.28	
<i>From west coast of Central America to east coast of Mexico:</i>							
United States	1	2,536	2,512	3,185	2,489	1,902.00	
<i>Canadian coastwise:</i>							
British	1	1,815	2,042	3,099	1,868	2,268.75	1,705
<i>Colombian coastwise:</i>							
British	1	614	622	1,138	602	746.40	674
<i>Local—Balboa to Cristobal:</i>							
United States	1	6	6	5	3	4.50	
<i>Warships:</i>							
Spanish	1					7,172.50	
Totals, August, 1921	116	398,147	478,057	611,965	393,874	490,363.54	521,303
Totals, July, 1921	102	328,109	407,562	514,132	328,605	399,282.93	451,210
Totals, August, 1920	123	374,482	458,841	586,398	374,008	442,790.59	500,786

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending September 3, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Gen. G. W. Goethals	Panama Railroad Steamship Line.		September 2		2,076
Caribbean	Panama Railroad Cattle Industry.		August 30		244
Balboa	Caribbean Shipping Co.		August 30		106
Quillota	Pacific Steam Navigation Co.	August 28	August 30	114	69
San Pablo	United Fruit Co.	August 28	August 28	30	
San Juan	Pacific Mail Steamship Co.	August 28	September 2	873	1,699
Venezuela	Pacific Mail Steamship Co.	August 28	August 29	277	128
Camden	United Fruit Co.	August 28	August 31	7,665	
Cartago	United Fruit Co.	August 28	September 1	632	92
Urubamba	Panama Railroad Steamship Line.	August 29	September 3	239	126
Huasco	United Fruit Co.	August 30		1,024	
Orange Nassau	Royal West Indian Mail	August 30	August 30	173	
Pastores	United Fruit Co.	August 30	August 31	357	342
San Blas	United Fruit Co.	August 30	August 31	19	212
Atenas	United Fruit Co.	August 31	August 31	241	5
Jamaica	Pacific Steam Navigation Co.	August 31	September 3	26	82
Varg	Leyland Line.	September 1	September 2	11	
Columbia	Pacific Mail Steamship Co.	September 1	September 2	96	245
Teviot	Pacific Mail Steamship Co.	September 2	September 2	180	
Barima	Pacific Steam Navigation Co.	September 2	September 2	180	
Coronada	United Fruit Co.	September 3	September 3	735	
Orange Nassau	Royal West Indian Mail	September 3			
Allianca	Panama Railroad Steamship Line.	September 3		1,577	

¹ Pounds.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending September 3, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
San Juan	Pacific Mail Steamship Co.	August 27	August 28	10	1
Venezuela	Pacific Mail Steamship Co.	August 28	August 28	151	1
Romulus	A. O. Linvig.	August 29	August 29		48
Quillota	Pacific Steam Navigation Co.	August 30	August 30		9
San Juan	Pacific Mail Steamship Co.	September 2	September 2		12
Columbia	Pacific Mail Steamship Co.	September 2	September 2	5	5
Jamaica	Pacific Steam Navigation Co.	September 3	September 3		25
Salvador	Pacific Steam Navigation Co.	September 3	September 3	1	

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Growth of the United States Coastwise Trade.

The rapid growth of the United States coastwise trade through the Panama Canal during recent months is indicated by a comparison of the statistics for the period of 8 months from January 1 to August 31, 1921, with those for the calendar year 1920.

Period.	Atlantic to Pacific.		Pacific to Atlantic.		Total.	
	Ships.	Cargo tons.	Ships.	Cargo tons.	Ships.	Cargo tons.
Calendar year 1920.....	116	416,819	122	644,833	238	1,061,652
January to August, 1921.....	141	569,300	123	634,203	264	1,203,503

Both the number and ships and the cargo tonnage were greater during the first 8 months of the current year than during the entire year 1920.

Motor Ships.

The Scandinavian nations, as is well known, have been pioneers in the development of the marine Diesel engine. The East Asiatic Co. (Denmark), the Johnson Line (Sweden), and Fred Olsen & Co. (Norway) all operate motor ships in regular service through the Panama Canal. The great majority of the motor ships using the Canal are under Scandinavian flags.

Crude Oil Cargoes.

During the calendar year 1920, 828,223 tons of crude oil were shipped from the Mexican oil fields through the Panama Canal to the west coast of North and South America. During the first 6 months of 1921 crude oil shipments aggregated 684,227 tons. This is equivalent to a monthly average of 114,038 tons. But in July the crude oil tonnage dropped suddenly to 14,491, and the August shipments amounted to only 36,454 tons.

It is understood that this sudden decline resulted from the imposition of a higher export tax on Mexican oil, and that rather than pay the tax certain companies have temporarily stopped their shipments.

Embargo on Alligator Pears.

The Department of Agriculture of the United States has placed an embargo on all shipments of alligator pears from the Canal Zone, from Haiti, from ports in the Caribbean and from Central America, as it is claimed that alligator pears from these localities are subject to plant disease. Shipments from Colombia are not included in this embargo provided they come direct on a bill of lading from ports in Colombia; otherwise they will be considered in the same class as the prohibited shipments.

Persons procuring alligator pears in the prohibited ports while on a voyage to the United States should dispose of them prior to the arrival of the steamer at destination.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, September 10, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.		Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.									Nature.	Tons.	Gross.	Net.
Ribera	3	15	38	4	6	30	4	16	24	British	F. Bolton & Co.	338.0	51.0	24.6	New York.	Sydney.	Case oil.	5,400	5,469	4,042
Lewis	3	20	30	4	7	00	4	17	02	American	Luckenbach Line.	496.0	68.0	18.0	New York.	San Francisco	General.	2,200	11,489	8,732
Loch	4	12	33	4	8	47	4	22	30	Norwegian	A. O. Linberg.	265.0	38.0	11.0	New Orleans.	Vancouver	Ballast.	1,900	1,938	1,138
Raja California.	4	12	33	4	8	47	4	22	30	American	Atl. Gulf & Pac. S. S. Co. (S. B.)	404.0	53.0	19.1	New York.	Seattle.	General.	3,200	6,755	4,750
Chas. H. Camp	4	12	33	4	8	47	4	22	30	Peruvian	Peruvian Line.	381.0	46.0	19.3	Cristobal.	Ilo.	General.	123	4,803	2,951
Univania	4	19	02	4	11	20	4	19	40	American	Wessel Duval & Co. (S. B.)	390.0	54.0	16.3	New York.	Talcahuano.	General.	686	6,106	4,355
Mitropeia	4	19	03	5	8	15	5	15	22	American	R. S. Dalghesh	400.0	52.0	15.0	Newcastle.	Portland.	Ballast.	5,732	3,991	3,991
Ashworth	4	19	03	5	8	15	5	15	22	British	R. S. Dalghesh	400.0	52.0	15.0	Newcastle.	Portland.	Ballast.	5,732	3,991	3,991
Ansaldo San	4	18	30	6	6	15	6	14	39	Italian	Soc. Nat. Navigation Co.	385.0	49.0	16.0	Genoa.	Valparaiso	General.	620	5,907	4,310
Georgia III	6	6	09	6	8	03	6	15	35	Japanese	Kawasaki Kisen Kaisha	385.0	51.0	12.0	Pensacola.	Puget Sound	Ballast.	5,928	4,381	4,381
Baldern Maru	6	12	25	6	12	40	6	20	41	British	Glover Brothers	390.0	51.0	17.0	Liverpool	San Francisco	Ballast.	5,374	3,783	3,783
Ravenoek	6	12	25	6	8	05	6	14	54	American	United States Navy				Cristobal	Balboa				
0-16*	6	16	23	6	8	05	6	14	54	American	United States Navy				Cristobal	Balboa				
Calveston	6	16	23	6	15	7	14	12		American	United States Navy	308.0	44.0	27.9	Norfolk	Balboa		8,000	7,539	5,448
Bassomont	6	14	40	7	20	7	15	10		American	United States Steel Products Co.	424.0	56.0	27.0	New Orleans.	Shanghai	Steel and cotton.	5,200	11,600	8,685
Rumaga	7	11	56	7	18	03	7	16	08	British	New Zealand Shipping Co.	485.0	62.0	28.0	London	Auckland	Steel rails.	5,926	4,434	4,434
Holland Maru.	7	11	56	7	18	03	7	16	08	Japanese	Kawasaki Kisen Kaisha	385.0	51.0	18.0	Cardiff	Portland.	Ballast.	6,245	7,391	5,747
Kanasa	7	23	35	8	14	22	8	17	28	Japanese	Ellerman & Bucknell	432.0	55.0	24.0	New York.	Yokohama.	General.	5,928	4,381	4,381
Thames Maru.	8	6	23	8	15	10	8	16	14	Japanese	Kawasaki Kisen Kaisha	385.0	51.0	18.0	Norfolk	Seattle.	Ballast.	2,307	9,158	6,970
Arianian	8	6	23	8	15	10	8	16	14	American	American-Hawaiian Line	470.0	57.0	20.6	New York.	Seattle.	General.	2,302	9,158	6,970
Saltador.	8	21	05	8	10	44	8	17	18	British	Pacific Steam Navigation Co.	215.0	33.0	19.1	Cristobal	Guayaquil.	General.	2,610	3,952	2,742
Luna	8	38	8	10	44	8	18	10	8	British	Pacific Steam Navigation Co.	360.0	43.0	19.1	Cristobal	Guayaquil.	General.	3,534	5,680	4,112
Wilfredo	8	10	10	8	11	50	8	19	04	American	Williams Steamship Co.	386.0	52.0	20.0	Philadelphia	Tacoma.	General.	12,038	11,519	7,008
Achilles	8	23	10	8	6	40	9	14	33	American	Panama Railroad Steamship Line	514.0	65.0	27.1	Norfolk	Balboa.	Coal	1,100	4,243	3,123
Ceres	8	8	16	9	12	38	9	19	06	Dutch	Royal Netherlands W. I. Mail.	348.0	48.0	13.3	Gatun.	Valparaiso	General.	816	9,037	6,089
General Getty	9	15	00	9	15	00	9	15	00	American	United States Army	450.0	58.0	22.6	New York.	Valparaiso	General.	9,950	7,285	5,256
Essequibo.	9	6	12	10	6	12	10	14	29	British	Pacific Steam Navigation Co.	395.0	55.0	27.0	New York.	San Pedro	Sulphur, general.	1,651	918	918
Enley City.	2	18	15	10	8	13	10	16	55	American	Isthmian Steamship Lines	220.0	37.0	11.1	Cristobal	Champerico.	General.	1,592	6,106	4,346
Barima	2	18	15	10	9	50	10	16	07	British	Pacific Steam Navigation Co.	390.0	54.0	18.1	Boston.	Seattle.	General.			
Leluh	10	8	50	10	10	55	10	19	00	American	N. Atl. & Western S. S. Co. (S. B.)									

* Submarine.

* Cruiser.

* Collier.

* Mine planter.

THE PANAMA CANAL RECORD

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Ship	Date	From	Line	Vessel	Date	Vessel	Line	For
1. Paz 5	3 15 45	4 7 47	4 15 35	4 16 45	British	4 16 45	British	General
Arechusa	2 17 59	3 8 05	4 15 45	6 17 00	American	6 17 00	American	Ballast
West Cusseta	4 4 55	4 8 05	4 17 00	7 02 00	American	7 02 00	American	Barley
Henry S. Grove	4 8 30	4 10 07	4 17 10	4 19 04	American	4 19 04	American	Lumber, general
West Farlow	4 7 30	4 10 33	4 18 35	6 11 56	American	6 11 56	American	General
Steel Ranger	4 10 15	4 11 56	4 20 00	5 8 49	American	5 8 49	American	General
Gen. H. F. Hodges	4 16 50	5 7 12	5 15 40	7 15 40	American	7 15 40	American	General
Newport	4 7 34	5 7 19	5 15 50	6 13 34	American	6 13 34	American	General
Minola	4 15 55	5 8 21	5 16 55	6 15 40	American	6 15 40	American	General
S. C. 287	3 19 32	5 11 20	5 16 40	7 10 10	American	7 10 10	American	General
Vicksburg	5 16 30	6 7 10	6 13 45	11 19 39	American	11 19 39	American	General
Ortega	6 6 30	6 9 31	6 16 25	6 18 18	British	6 18 18	British	General
Tyne Maru	6 9 00	6 10 27	6 18 10	6 20 10	Japanese	6 20 10	Japanese	General
Ansaldo IV	7 13 15	8 7 11	8 13 40	8 21 15	Italian	8 21 15	Italian	General
Huallaga	8 6 15	8 9 01	8 16 05	8 16 05	Peruvian	8 16 05	Peruvian	General
Manapallana	8 8 00	8 9 54	8 17 15	8 17 15	British	8 17 15	British	General
Amputaria	8 11 25	8 12 03	8 20 10	9 12 45	British	9 12 45	British	General
Author	8 19 00	9 17 46	9 15 25	11 6 35	British	11 6 35	British	General
Willho	9 1 00	9 8 56	9 17 50	12 6 24	American	12 6 24	American	General
Balboa	9 8 40	9 9 58	9 18 25	12 10 50	American	12 10 50	American	General
S. C. 284	7 28 14	8 9 09	9 17 15	10 18 07	American	10 18 07	American	General
Solana	8 25 16	10 6 49	10 14 30	10 18 07	American	10 18 07	American	General
Gredise	9 15 00	10 7 40	10 15 00	11 6 30	British	11 6 30	British	General
Denver	8 27 16	10 8 30	10 15 28	10 18 00	American	10 18 00	American	General
Nashaba	9 18 55	10 8 48	10 16 55	11 13 40	American	11 13 40	American	General
Yorba Linda	10 1 30	10 9 34	10 16 55	11 13 40	American	11 13 40	American	General
Springfield	10 6 30	10 9 45	10 17 45	11 7 26	American	11 7 26	American	General
Narcissus	10 9 30	10 11 11	10 19 30	11 2 15	American	11 2 15	American	General
Laura C. Hall	10 2 30	10 14 09	10 21 37	12 6 10	British	12 6 10	British	General

* Motor ship.

* Coast Guard cutter.

* 130,000 feet B. M.

* Case pineapples.

* Copper, cotton, hides, etc.

* Shingles and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	From	Line.	Date.	Vessel.	Line.	For
Sept. 4	Abangarez	United Fruit Co.	United Fruit Co.	Sept. 4	Oranje Nassau	Royal Netherlands W. I. Mail	Amsterdam.
Sept. 4	Caribbean	Panama Railroad Cattle Industry.	Panama Railroad Cattle Industry.	Sept. 4	Abangarez	United Fruit Co.	Bocas del Toro.
Sept. 5	Parissima	United Fruit Co.	United Fruit Co.	Sept. 5	Teviot	United Fruit Co.	Cartagena.
Sept. 6	Asian	Leyland Line.	Leyland Line.	Sept. 7	Gen. H. F. Hodges	Panama Railroad Steamship Line	New Orleans via Haiti.
Sept. 6	Ulua	United Fruit Co.	United Fruit Co.	Sept. 7	Abangarez	United Fruit Co.	New Orleans.
Sept. 7	Abangarez	United Fruit Co.	United Fruit Co.	Sept. 7	Ulua	United Fruit Co.	New York via Port Limon.

(Continued on page 76, column 2.)

Cargo Shipped Through the Canal during Fiscal Year between Principal Trade Areas.

The most important trade route through the Panama Canal in the fiscal year ending June 30, 1921, on the basis of total cargo shipped, was that between the Atlantic coast of the United States and the west coast of South America. Of the total of 11,599,214 tons of goods shipped through the Canal during the year, 1,908,858 tons were moving over this route. This was 16.46 per cent, approximately one-sixth, of the total cargo handled. Shipments from the United States to the west coast of South America were 933,261 tons; and from the west coast to the United States, 975,597 tons.

The heaviest shipments one way over any route, however, were those from the Atlantic coast of the United States to the Far East. They amounted to 1,213,906 tons, over one-tenth of all the cargo handled. But return shipments over this route amounted to only 428,044 tons; the total moving between the areas by way of the Canal was accordingly, 1,641,950 tons, which was less than the total movement between the east coast of the United States and the west coast of South America. The combined United States-Far East cargo movement through the Canal, 1,641,950 tons, was 14.15 per cent, or slightly less than one-seventh of the total cargo passing through the Canal in the period.

United States coastwise traffic was third in importance, in total quantity of cargo handled both ways. The combined shipments amounted to 1,372,388 tons, of which 698,429 tons were shipped from Atlantic to Pacific and 673,959 tons from Pacific to Atlantic. The total was 11.83 per cent, over one-ninth of all cargo carried through the Canal during the year.

The route fourth in quantity of total cargo was that between the west coast of the United States and Europe, and the fifth was that between the west coast of South America and Europe. The figures for these routes, as well as for the others by which cargo was classified, are presented in the following table:

COMMERCIAL TRAFFIC THROUGH THE PANAMA CANAL DURING THE FISCAL YEAR 1921, BOTH WAYS, OVER PRINCIPAL TRADE ROUTES.

Route.	Direction.	Number of ships.	Panama Canal net tonnage.	Tons of cargo.
Between east coast of United States and west coast of South America..	A. to P. P. to A.	253 239	837,254 778,868	933,261 975,597
Total		492	1,616,122	1,908,858
Between east coast of United States and Far East.....	A. to P. P. to A.	187 74	915,720 351,904	1,213,906 428,044
Total		261	1,267,624	1,641,950
United States coastwise	A. to P. P. to A.	177 145	783,420 647,557	698,429 673,959
Total		322	1,430,977	1,372,388
Between west coast of United States and Europe	A. to P. P. to A.	80 158	383,028 782,117	144,591 1,154,840
Total		238	1,165,145	1,299,431
Between west coast of South America and Europe	A. to P. P. to A.	136 178	533,323 743,148	297,166 922,499
Total		314	1,276,471	1,219,665

Route.	Direction.	Number of ships.	Panama Canal net tonnage.	Tons of cargo.
Between Australasia and Europe.....	A. to P. P. to A.	72 100	489,763 701,530	391,848 579,745
Total.....		172	1,191,293	971,593
Between east coast of United States and Australasia.....	A. to P. P. to A.	90 27	476,854 156,283	620,428 147,877
Total.....		117	633,137	768,305
Between east coast of Mexico and west coast of South America.....	A. to P. P. to A.	77 79	383,466 400,455	654,659 230
Total.....		156	783,921	654,889
Between east coast of Mexico and west coast of United States.....	A. to P. P. to A.	27 40	143,046 204,977	261,205 8,155
Total.....		67	348,023	269,360
Between Cristobal, C. Z., and west coast of South America.....	A. to P. P. to A.	151 155	228,108 237,486	85,190 139,547
Total.....		306	465,594	224,737
Miscellaneous trade routes and sailings.....	A. to P. P. to A.	207 224	566,920 670,649	591,395 676,643
Total.....		431	1,237,569	1,268,038
Battleships, cruisers, etc., other than United States.....	A. to P. P. to A.	14 2	(¹) (²)	..... .....
Total.....		16	(³)	.....
Grand totals.....	A. to P. P. to A.	1,471 1,421	5,740,902 5,674,974	5,892,078 5,707,136
		2,892	11,415,876	11,599,214

A. to P.—Atlantic to Pacific. P. to A.—Pacific to Atlantic.

¹ Panama Canal net tonnage unavailable; displacement tonnage aggregated 87,473.

² Panama Canal net tonnage unavailable; displacement tonnage aggregated 36,885.

³ Total displacement tonnage of 124,361.

The preponderance of cargo movement in one direction over some of the routes is striking, notably in the traffic between the Atlantic coast of the United States and the Far East, and between Europe and the west coast of both North and South America. The movements from Atlantic to Pacific, and those from Pacific to Atlantic, are shown separately in order of quantity in the tables following, which also state the percentage of cargo which moved over each route:

COMMERCIAL TRAFFIC THROUGH THE PANAMA CANAL DURING THE FISCAL YEAR, 1921, BY TRADE ROUTES.
ATLANTIC TO PACIFIC.

	Number of ships.	Panama Canal net tonnage.	Tons cargo.	Percentage of cargo.	
				Atlantic to Pacific.	Both directions.
East coast of United States to Far East.....	187	915,720	1,213,906	20.60	10.46
East coast of United States to west coast of South America.....	253	837,254	933,261	15.84	8.05
United States coastwise.....	177	783,420	698,429	11.85	6.02
East coast of Mexico to west coast of South America.....	77	383,466	654,659	11.11	5.64
East coast of United States to Australasia.....	90	476,854	620,428	10.53	5.35
Europe to Australasia.....	72	489,763	391,848	6.65	3.38
Europe to west coast of South America.....	136	533,323	297,166	5.04	2.56
Mexico to west coast of United States.....	27	143,046	261,205	4.44	2.25
Europe to west coast of United States.....	80	383,028	144,591	2.46	1.25
Cristobal to west coast of South America.....	151	228,108	85,190	1.45	0.74
East coast of United States to west coast of Canada.....	13	59,598	82,827	1.40	0.72
East coast of United States to Balboa, C. Z.....	7	42,531	69,128	1.17	0.60
Cristobal, C. Z., to west coast of United States.....	24	43,578	32,048	0.54	0.27
Cristobal, C. Z., to west coast of Central America.....	32	21,013	15,227	0.26	0.13
West Indies to west coast of United States.....	4	10,931	3,466	0.06	0.03
West Indies to west coast of South America.....	4	5,261	2,512	0.04	0.02
Miscellaneous trade routes.....	123	384,008	386,187	6.55	3.33
Warships, cruisers, etc., other than United States.....	14	(¹)	.....	.....	.....
Totals.....	1,471	5,740,902	5,892,078	100.00	50.80

¹ Displacement tonnage of 87,473.

PACIFIC TO ATLANTIC.

	Number of ships.	Panama Canal net tonnage.	Tons of cargo.	Percentage of cargo.	
				Pacific to Atlantic.	Both directions.
West coast of United States to Europe.....	158	782,117	1,154,840	20.23	9.96
West coast of South America to east coast of United States.....	239	778,868	975,597	17.09	8.41
West coast of South America to Europe.....	178	743,148	922,499	16.16	7.95
United States coastwise.....	145	647,557	673,959	11.81	5.81
Australasia to Europe.....	100	701,530	579,745	10.16	5.00
Far East to east coast of United States.....	74	351,904	428,044	7.50	3.69
West coast of Canada to Europe.....	22	103,234	154,513	2.71	1.33
Australasia to east coast of United States.....	27	156,283	147,877	2.59	1.28
West coast of South America to Cristobal, C. Z.....	155	237,486	139,547	2.45	1.20
West coast of South America to Azore Islands.....	17	59,910	106,910	1.87	0.92
West coast of South America to West Indies.....	12	30,696	47,989	0.84	0.42
West coast of Central America to Cristobal, C. Z.....	39	25,733	17,378	0.31	0.15
West coast of United States to Cristobal, C. Z.....	23	41,976	14,578	0.26	0.13
West coast of United States to east coast of Mexico.....	40	204,977	8,155	0.15	0.07
West coast of Central America to east coast of United States.....	4	3,214	1,431	0.03	0.01
West coast of South America to east coast of Mexico.....	79	400,455	230		
Balboa, C. Z., to east coast of United States.....	9	51,448			
Balboa, C. Z., to east coast of Mexico.....	9	46,972			
Miscellaneous trade routes.....	89	307,466	333,844	5.85	2.87
Warships, cruisers, etc., other than United States.....	2	(²)			
Totals.....	1,421	5,674,974	5,707,136	100.00	49.20

COMPARISON WITH CALENDAR YEAR 1920.

In the calendar year ending December 31, 1920, the total cargo carried through the Canal was 11,236,119 tons of cargo. The 11,599,214 tons passing through the Canal in the last fiscal year were 363,085 tons more than during the calendar year, a gain of 3.2 per cent.

In the calendar year the leading route was, as in the fiscal year, that between the United States and South America, with a total of 2,341,242 tons; and second place was held by the traffic between the United States and the Far East, aggregating 1,827,913 tons.

Third place, however, which had been held by the traffic between Europe and South America in the calendar year 1920, was taken in the fiscal year by the United States coastwise trade. The Europe-South America traffic decreased from 1,322,623 tons to 1,219,665, while the United States coastwise trade increased from 1,061,652 to 1,372,388 tons. The Europe-South America traffic occupied fifth place in the fiscal year 1921. The fourth place was taken by the trade between Europe and the west coast of the United States, with 1,299,431 tons. The latter route was fifth in the calendar year, with 859,848 tons.

The route between Australasia and Europe occupied sixth place in both the calendar and fiscal years. The tonnage of cargo moving over it in the calendar year was 770,403 tons. For the fiscal year it was 971,593 tons.

ORIGIN AND DESTINATION OF ALL CARGO.

In connection with the statistics of traffic by trade routes, there has been compiled a briefer, summarizing tabulation (presented on pages 72 and 73) which shows the aggregate quantities shipped from the principal areas and distributed to principal areas.

There is an apparent discrepancy between this tabulation and the trade route tables, in that a greater quantity of cargo is shown as originating in the east coast of the United States, for example, than the sum of the shipments from the east coast of the United States

¹ For orders.² Displacement tonnage of 36,888; Panama Canal net tonnage unavailable.

shown in the trade route table. This is because certain miscellaneous shipments were not of sufficient quantity to be given a separate trade-route classification. In the case of the shipments from the Atlantic coast of the United States, totaling 3,712,029 tons in the fiscal year, the trade route classifications embraced a total of 3,617,979 tons, shown definitely from the United States to specified areas, and 94,050 tons not routed on any of the classified routes were included as "miscellaneous."

ATLANTIC TO PACIFIC.

The summary by origin and destination shows that of a total of 5,892,078 tons of cargo passing through the Canal from Atlantic to Pacific in the fiscal year, 3,712,029 tons, or 63 per cent, originated in the United States; 1,071,782 tons, 18.2 per cent, in Mexico; 545,419 tons, 9.3 per cent, in the British Isles; 262,926 tons, 2.3 per cent, in other parts of Europe, and smaller quantities in other areas.

Of the 5,892,078 tons passing from Atlantic to Pacific, 32.9 per cent went to the west coast of South America, 22.3 per cent to the Far East, 20 per cent to the west coast of the United States, 18.4 per cent to Australasia, and small quantities to the other areas shown in the table.

PACIFIC TO ATLANTIC.

The total cargo movement from Pacific to Atlantic during the year amounted to 5,707,136 tons. Of this quantity, 40 per cent originated on the west coast of South America, 34.1 per cent on the west coast of the United States, 12.7 per cent in Australasia, 8.9 per cent in the Far East, and smaller proportions as shown in the table.

Of those 5,707,136 tons from Pacific to Atlantic, 39.4 per cent was destined to the east coast of the United States, 30.9 per cent to the United Kingdom, 19.6 per cent to other parts of Europe; and the remaining 10.1 per cent was distributed as shown.

COMBINED ORIGINS.

The total quantity of cargo handled in both directions was 11,599,214 tons. In shipping 3,712,029 tons of that from Atlantic to Pacific and 1,948,848 of that from Pacific to Atlantic, the United States was the country of origin of a total of 5,660,877 tons, or 48.8 per cent, of the total cargo shipped.

South America shipped 2,280,593 tons from her west coast and 27,507 tons from her east coast through the Canal, a total of 2,308,100 tons, or approximately 20 per cent of the aggregate movement.

Canada shipped 39,561 tons through the Canal from her east coast and 125,638 tons from her west coast, aggregating 165,199 tons, or 1.4 per cent of all shipments.

Mexico shipped 1,071,782 tons from her east coast through the Canal, but such shipments as came from her west coast were bulked with those from the west coast of Central America, which amounted to 49,265 tons. Total shipments from Mexico were about 9.4 per cent of the grand total.

No other areas classified sent cargo through the Canal in both directions.

RECEIPTS OF CARGO.

With respect to the receipt of the total of 11,599,214 tons which made up the traffic in both directions, the Atlantic coast of the United

States was the destination of 2,248,843 tons and the Pacific coast of 1,176,424 tons, a total of 3,425,267 tons. This was 29.5 per cent of the total handled.

South America received 1,938,542 tons on the west coast, and any receipts on the east coast through the Canal were not classified. South America was the destination of about 16.7 per cent of all the cargo, approximately one-sixth of the total shipments through the Canal.

Canada received 126,414 tons on the west coast and 16,558 tons on the east coast, through the Canal. The total, 142,972 tons, was 1.2 per cent of the total movement. The receipts in Mexico are not classified separately and no other classified areas received cargo from both directions through the Canal.

COMBINED SHIPMENTS AND RECEIPTS.

The United States, through originating or receiving cargo (doing both, of course, in the case of the 1,372,388 tons handled in the United States coastwise trade), participated in the handling of 9,086,144 tons. Similarly, South America either shipped or received a total of 4,246,642 tons. Canada was concerned in the handling of 308,171 tons. The total in which Mexico was concerned was 1,071,782 tons, as far as classified.

Of those countries or areas not so situated as to receive cargo passing through the Canal in both directions, the United Kingdom, despatching 545,419 tons and receiving 1,763,431 tons, participated in the handling of a total of 2,308,850 tons through the Canal; other European countries, despatching 262,926 tons and receiving 1,116,115 tons, were interested in a total of 1,379,041 tons. The West Indies shipped 92,667 tons through the Canal and received 136,334 tons, a total of 229,001.

On the Pacific side, shipments to the Far East through the Canal were 1,311,641 tons, and from it, 506,072 tons, a total of 1,817,713 tons. Shipments to Australasia amounted to 1,081,875 tons, and shipments from that area to 726,949 tons, a total of 1,808,824 tons.

Summaries for the lesser areas may be made from the tables.

Danish Shipping and the Panama Canal.¹

Danish shipping through the Panama Canal, like Norwegian, was heaviest during the latter years of the war. During the fiscal year ending June 30, 1918, Danish vessels making the transit numbered 100. In the following year there were 79, and in the year after that only 9. The fiscal year 1921 showed a total of 60 transits. These fluctuations are shown in greater detail in the table below:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915	10	13	23
1916	10	8	18
1917	26	17	43
1918	44	56	100
1919	37	42	79
1920	4	5	9
1921	28	32	60
Totals.	159	173	332

¹ This is the fifth of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, and Norwegian shipping.

The majority of the 60 Danish vessels passing the Canal during the past year were either in the trade between Europe and the Pacific coast of North America or in the trade between the Atlantic coast of the United States and the west coast of South America. However, there were a few ships in other trades. An exact analysis shows the following:

DANISH SHIPPING USING THE PANAMA CANAL DURING THE FISCAL YEAR, 1921; SEGREGATION BY TRADE ROUTES.

	Vessels.	Cargo tons.
East coast of United States to west coast of South America.....	14	73,902
West coast of South America to east coast of United States.....	7	41,563
Europe to west coast of South America.....	4	14,481
West coast of South America to Europe.....	9	46,275
Europe to west coast of North America.....	8	14,481
West coast of North America to Europe.....	9	73,392
East coast of United States to Balboa.....	1	5,532
Far East to Europe.....	4	35,493
Australasia to Europe.....	2	15,895
West coast of South America to West Indies.....	1	945
East coast of United States to west coast of United States.....	1	
Totals.....	60	322,059

* Total includes 1 vessel in ballast.

The 14 vessels southbound from the United States to the west coast of South America and the 1 vessel from the United States to Balboa all carried coal from Chesapeake Bay, and the 7 vessels northbound from South America to the United States carried nitrate cargoes. Five of the 9 vessels northbound from South America to Europe also carried nitrate cargoes. Two vessels from the Pacific coast of North America carried wheat. There was 1 cargo of wheat and beans from the Far East, and 1 of wheat and copra from Australasia. All other cargoes were reported as general.

The following Danish owners were represented: East Asiatic Co., with 24 transits; Orient Steamship Co., 11; United Steamship Co., 10; A. P. Moller, 6; C. K. Hansen, 4; Atlanterhavet Steamship Co., 3; Th. Just, 1; South Holland Shipping Co., 1.

Traffic of Commercial Ships of Various Nationalities by Fiscal Years.

Summaries of the traffic of commercial vessels of various nationalities through the Canal, by fiscal years, to the close of the fiscal year ending June 30, 1921, are presented in the following tables. The tables show, in order, the number of such vessels in each year; their aggregate net tonnage, Panama Canal measurement; and the aggregate cargo carried through the Canal on the ships.

In the table of number of vessels, warships of foreign nations are included, as they pay tolls; but in the summary of net tonnage their displacement is not included with the net tonnage.

Number of Commercial Vessels by Nationality Passing Through the Panama Canal from its Opening to June 30, 1921, by Fiscal Years.

Nationality.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	Total.
Argentinian.....		1		1				2
Belgian.....					1	1	2	4
Brazilian.....						3	1	4
British.....	465	358	780	702	607	753	972	4,637
Chilean.....	35	33	99	96	93	79	63	498
Chinese.....				2	4	2	4	12
Colombian.....					1	1		2
Costa Rican.....			23	19	12	1	16	71

Number of Commercial Vessels by Nationality Passing Through the Panama Canal from its Opening to June 30, 1921, by Fiscal Years.—Continued.

Nationality.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	Total.
Cuban.....			8				1	7
Danish.....	24	18	43	100	79	9	60	333
Dutch.....	7	15	74	48	19	29	50	242
Ecuadorian.....					1			1
Finnish.....							2	2
French.....	3	1	9	52	104	50	44	273
German.....						17	19	36
Greek.....				2	3			5
Honduran.....	3	3						6
Italian.....	2	1	2	4		26	25	60
Japanese.....	6	24	72	54	87	118	136	497
Jugo-Slovak.....							2	2
Mexican.....			13	1	1		4	19
Nicaraguan.....	1		2					3
Norwegian.....	42	44	145	296	128	106	140	901
Panaman.....	1	3	5	2		4	8	23
Peruvian.....	4	30	86	83	64	75	60	402
Portuguese.....						2		2
Russian.....	6	1	2	3	3	2	4	21
Spanish.....			20	11	5	41	44	121
Swedish.....	17	13	18	26	27	19	25	145
United States.....	459	213	404	567	784	1,129	1,210	4,766
Uruguayan.....					1	1		2
Totals.....	1,075	758	1,803	2,069	2,024	2,478	2,892	13,099

The Panama Canal Net Tonnage of Commercial Vessels by Nationality Passing Through the Panama Canal from its Opening to June 30, 1921, by Fiscal Years.

Nationality.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	Total.
Argentinian.....		2,335		(¹)				2,335
Belgian.....					265	266	8,092	8,623
Brazilian.....						19,164	4,566	23,730
British.....	1,630,833	1,161,097	2,663,250	2,529,203	1,915,744	2,760,188	3,978,329	16,638,644
Chilean.....	94,638	91,243	265,210	254,841	253,561	212,000	159,727	1,331,220
Chinese.....				7,799	15,204	7,799	12,098	42,900
Colombian.....					66	95		161
Costa Rican.....			1,909	1,577	995	25	2,784	7,290
Cuban.....			9,292				702	9,994
Danish.....	92,537	68,011	163,882	272,946	213,534	32,221	236,512	1,079,643
Dutch.....	21,075	39,642	260,500	197,627	88,299	152,535	248,801	1,008,479
Ecuadorian.....					66			66
Finnish.....							4,281	4,281
French.....	10,703	4,343	38,889	147,805	253,774	114,664	155,889	726,067
German.....						52,755	67,334	120,089
Greek.....				6,572	8,003			14,575
Honduran.....	122	484						606
Italian.....	4,158	3,861	6,430	17,218		98,692	102,783	233,142
Japanese.....	24,897	81,818	291,500	238,814	341,064	515,243	613,245	2,106,581
Jugo-Slovak.....							4,508	4,508
Mexican.....			24,446	229	113		5,032	29,820
Nicaraguan.....	46		1,598					1,644
Norwegian.....	130,776	172,459	490,534	876,024	497,555	397,632	548,227	3,113,207
Panaman.....	15	439	160	60		1,007	1,370	3,051
Peruvian.....	9,463	74,429	218,593	208,958	166,956	191,689	157,495	1,027,523
Portuguese.....						9,002		9,002
Russian.....	22,400	1,475	4,546	5,700	5,699	6,093	11,279	57,192
Spanish.....			49,124	24,469	11,066	106,651	117,400	308,710
Swedish.....	50,824	41,637	69,202	80,191	95,684	78,825	113,661	527,924
United States.....	1,700,145	652,989	1,239,492	1,704,040	2,257,342	3,791,088	4,861,761	16,206,857
Uruguayan.....					(²)	410		410
Totals.....	3,792,572	2,396,162	5,798,557	6,574,073	6,124,990	8,546,044	11,415,876	44,648,274

¹ Argentinian Navy school ship of 2,187 tons displacement.

² Uruguayan cruiser of 3,100 tons displacement.

Tons of Cargo Carried by Commercial Vessels Passing Through the Panama Canal from its Opening to June 30, 1921, by Fiscal Years.

Nationality.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	Total.
Belgian.....					464		12,700	13,570
Brazilian.....						8,916	6,700	15,616
British.....	2,200,514	1,570,660	3,393,750	2,615,675	1,876,939	2,830,268	3,738,257	18,226,063
Chilean.....	50,879	53,573	184,446	153,259	161,340	104,738	61,737	769,972
Chinese.....				13,417	13,421	13,700	14,400	54,938

Tons of Cargo Carried by Commercial Vessels Passing through the Panama Canal from its Opening to June 30, 1921, by Fiscal Years.—Continued.

Nationality.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	Total.
Colombian						27		27
Costa Rican			3,069	2,091	1,137		2,112	8,409
Cuban			7,370				1,200	8,570
Danish	116,603	94,950	242,567	420,063	325,277	42,533	322,059	1,564,052
Dutch	26,402	61,959	314,203	233,063	119,297	128,442	216,488	1,099,854
Ecuadorian					72			72
Finnish							7,101	7,101
French	13,600	7,176	36,680	159,859	286,812	125,249	132,836	762,212
German						59,239	73,837	133,076
Greek				5,741	8,301			14,042
Honduran		321						321
Italian	900		5,700	13,793		63,441	47,988	131,822
Japanese	42,600	117,780	446,358	407,399	503,427	726,338	758,617	3,002,519
Jugo-Slovak							8,325	8,325
Mexican			22,545	253	142		3,785	26,725
Nicaraguan	6							6
Norwegian	166,522	229,366	597,581	1,090,823	577,679	404,323	637,887	3,704,183
Panaman			135			872	1,500	2,507
Peruvian	8,202	62,210	159,609	143,344	121,524	119,418	105,322	719,629
Portuguese						10,775		10,775
Russian	21,030	24	3,230	7,059	8,340	12,867	11,343	63,893
Spanish			71,080	35,394	10,047	101,563	143,076	361,160
Swedish	53,292	47,236	94,515	132,521	143,516	74,244	128,919	674,243
United States	2,187,904	848,857	1,475,725	2,098,277	2,758,886	4,547,140	5,163,025	19,079,814
Totals	4,888,454	3,094,114	7,058,563	7,532,031	6,916,621	9,374,499	11,599,214	50,463,496

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended September 10:

U. S. submarines *O-15*, dock, stage, clean and paint; grind-in all C. and R. valves; install new rubber-seated valves; overhaul superstructure floods and vents; repair after-starboard hydroplane; manufacture and install new vertical anchor gear shaft; renew hull zincs; install port tube shutters and fit bails; overhaul both C. and R. air compressors; renew battery vent boxes; install new starboard propeller; repair starboard strut bearing; grind-in all engineering sea valves; repair mount for 3-inch gun; *O-16*, dock, stage, clean and paint bottom; grind-in all C. and R. sea valves; renew hull zincs; realign shafting for diving rudder; repair hydroplane angle indicator; repair starboard forward hydroplane; repair after-battery vent duct; repair anchor windlass shafting; repair lever arms and install on bow shutters; reinstall bow shutters; repack stern tube glands; grind-in all engineering sea valves; tug *Mariner*, dock, stage, clean and paint bottom; barges *No. 176*, dock, stage, scale bottom, and paint bottom to lower guard; *No. 194*, dock, stage, scale bottom, and paint bottom to light load line.

PREVIOUSLY REPORTED.

Steamship *Solana*, dock, stage, clean, paint bottom, and perform miscellaneous engineers' and deck department repairs; tug *Gorgona*, miscellaneous repairs; launch *P-1*, rebuilding of hull; barges *No. 171*, dock, stage, scale, paint, and miscellaneous repairs; *No. 147*, dock, stage, scale and paint bottom; *No. 46*, dock, stage, scale and paint bottom; *No. 188*, dock, stage, scale and paint bottom; tug *Bolivar*, dock, stage, scale and paint bottom; steamship *Panama*, reboiling and general overhaul to machinery and hull.

The following vessels were at the Cristobal shops for repairs during the week ended September 12:

Steamships *Ulysses*, *General W. C. Gorgas*, *Allianca*, and *General H. F. Hodges*, miscellaneous repairs and painting to engine, deck, and steward departments; U. S. S. *Patuxent*, straighten and secure 1 brace rod to bulkhead; barge *No. 1*, dock and undock; clean and paint; renew 6 shell plates; steamships *Caribbean*, *Quillota*, *Heredia*, *Huallaga*, *Nashaba*, *Newport*, *West Faralon*, barque *C. D. Bryant*, tug *Favorite*, and launch *Hibiscus*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *Eagle No. 31*, overhaul sea valves and zincs; motor ship *Satow*, general overhauling, including dry-docking; U. S. Jr. M. P. *Nones*, manufacturing awnings, stanchions, etc.; steamship *Toedjoe*, install bulwarks, alter crew accommodations, etc.

Origin and Destination of all Commercial Cargo Passing Through the Panama Canal from the Pacific to the Atlantic. Fiscal Year 1921.

(Figures represent tons of 2,240 pounds.)

Period.	West coast of South America.	West coast of United States.	Australasia.	Far East.	West coast of Canada.	Hawaiian Islands.	West coast of Central America.	Miscellaneous.	Totals.	East coast of United States.	British Isles.	Other European.	West Indies.	Azore Islands.	Africa.	East coast of Canada.	Christobal, C. Z.	Miscellaneous.
1920.																		
July	88,677	166,866	72,059	145,369	8,189		6,337		488,487	164,613	170,994	74,154	40,810		22,124		15,114	688
August	222,159	116,729	69,514	72,788	15,999		3,597		500,786	217,350	161,979	41,333	21,049		16,050		34,778	7,647
September	235,274	135,627	69,415	102,264	9,453	5,637	2,095	5,575	565,340	320,634	133,696	56,531	16,712		25,214		12,553	
October	208,547	191,237	45,565	29,315	12,318	12,371	3,000		502,353	193,161	181,824	77,238	6,851	6,621	7,622		23,036	6,000
November	200,077	193,700	48,864	38,167	11,401		1,502		493,801	197,226	133,102	131,981	10,717				15,165	5,610
December	257,956	137,029	42,928	12,080	5,536		1,559		457,088	179,052	138,572	92,741	7,990	19,345			19,388	
1-year	1,213,690	941,278	348,345	399,983	62,896	18,008	18,090	5,575	3,007,865	1,272,036	920,167	473,978	104,129	25,966	71,610		120,034	19,945
1921.																		
January	260,211	207,303	110,905	21,745	17,946		1,785		619,895	193,390	218,040	171,840	4,628			8,463	23,534	
February	241,740	179,518	26,807	24,098	3,869		2,000		478,032	157,586	125,806	101,590	34,188	38,667		2,659	4,706	12,830
March	196,687	142,403	63,912	19,653	19,281		6,048		447,984	153,136	151,881	98,371	1,153	15,524		5,436	10,906	11,577
April	157,489	135,726	79,973	16,045	7,270	5,400	4,906		406,812	174,811	128,077	93,818	1,589				8,562	9,955
May	107,466	185,209	51,533	7,813	11,120	39,699	8,332	240	411,412	150,016	118,547	110,169	6,188			14,549	11,943	
June	103,310	157,408	45,474	16,735	3,250	849	8,104		335,136	147,868	100,913	66,349	5,659				13,603	744
1-year	1,066,903	1,007,570	378,604	106,089	62,742	45,948	31,175	240	2,699,271	976,807	843,264	642,137	32,405	54,191		16,558	75,860	38,049
Fiscal year	2,280,593	1,948,848	726,949	506,072	125,638	63,956	49,265	5,815	5,707,136	2,248,843	1,763,431	1,116,115	156,534	80,157	71,610	16,558	195,894	57,994
Per cent of total cargo.	40.0	34.1	12.7	8.9	2.2	1.1	0.9	0.1	100.0	39.4	30.9	19.6	2.7	1.4	1.3	0.3	3.4	1.0

For orders.

Origin and Destination of all Commercial Cargo Passing Through the Panama Canal from the Atlantic to the Pacific. Fiscal Year 1921.

(Figures represent tons of 2,240 pounds.)

Period.	East coast of United States.	British Isles.	Other European.	East coast of Mexico.	East coast of Canada.	East coast of South America.	West Indies.	Cristobal, C. Z.	Miscellaneous.	Totals.	West coast of South America.	Far East.	West coast of United States.	Australasia.	West coast of Canada.	Central America.	Balboa, C. Z.	Miscellaneous.
1920.																		
July.....	233 143	52 062	13 221	71 569	5 500	1 815	9 400	16 085	1 022	398 317	149 037	92 041	39 359	72 516	15 974	9 626	19 764	.....
August.....	309 340	87 814	15 826	104 159	5 500	5 035	28	12 232	.....	539 954	177 078	158 352	76 004	95 977	9 426	1 578	19 416	2 123
September.....	264 815	56 283	6 818	81 533	6 109	6 903	2 867	18 889	.....	444 217	161 771	105 158	89 243	67 696	5 534	1 738	13 077	.....
October.....	331 040	48 360	27 202	64 661	3 705	1 693	.....	17 450	.....	488 713	189 748	125 642	59 326	98 322	3 290	1 685	10 500	.....
November.....	341 220	45 666	15 274	73 200	7 583	1 693	.....	10 261	.....	491 109	198 400	58 610	86 068	132 323	10 368	5 140	.....	.....
December.....	456 131	38 174	18 593	81 383	7 583	524	.....	17 063	.....	619 451	276 574	149 630	76 400	84 205	500	7 770	24 372	.....
4-year.....	1 935 689	328 359	96 934	476 505	22 987	15 970	12 295	92 000	1 022	2 981 761	1 152 608	689 433	426 900	551 239	45 092	27 537	87 129	2 123
1921.																		
January.....	355 821	41 132	27 589	110 830	5 684	2 365	5 091	14 310	.....	557 158	196 127	86 180	126 952	107 213	6 433	2 354	31 899	.....
February.....	318 019	18 544	18 492	95 653	5 684	.....	11 360	7 120	.....	474 572	174 066	93 771	109 899	71 138	10 150	3 981	8 927	3 000
March.....	311 303	84 086	46 533	145 949	2 808	171	38 210	7 019	.....	636 579	149 368	147 367	127 788	140 454	28 040	2 915	40 647	.....
April.....	305 918	40 002	27 225	82 985	6 150	6 916	23 211	6 394	.....	500 801	121 679	110 916	136 582	112 890	6 392	2 342	10 000	.....
May.....	243 574	24 447	19 403	87 720	1 396	1 131	.....	3 650	.....	381 323	73 871	92 997	139 458	60 985	418	910	10 549	2 135
June.....	241 705	8 829	26 748	72 140	536	954	.....	8 672	.....	359 584	70 883	90 977	109 145	37 956	29 889	7 195	7 183	6 356
4-year.....	1 776 340	217 060	165 992	595 277	16 574	11 537	80 372	47 165	.....	2 910 317	785 934	622 208	749 824	530 636	81 322	19 697	109 205	11 491
Fiscal year.	3 712 029	545 419	262 926	1 071 782	39 561	27 507	92 667	139 165	1 022	5 892 078	1 938 542	1 311 641	1 176 424	1 081 875	126 414	47 234	196 334	13 614
Per cent of total cargo	63.0	9.3	4.5	18.2	0.7	0.5	1.6	2.3	.....	100.0	32.9	22.3	20.0	18.4	2.1	0.8	3.3	0.2

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending September 10, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Teviot.....	Royal Mail Steam Packet Co.....		September 4.		747
Barima.....	Pacific Steam Navigation Co.....		September 10.		4
Allianza.....	Panama Railroad Steamship Line.....		September 8.		561
Salvador.....	Pacific Steam Navigation Co.....	September 3.	September 8.	848	305
Ansaldo San Giorgio III.	Italian Line.....	September 4.	September 6.	86	
Caribbean.....	Panama Railroad Steamship Line.....	September 4.	September 11.	50	25
Newport.....	Pacific Mail Steamship Co.....	September 4.		286	
Gen. H. F. Hodges.....	Panama Railroad Steamship Line.....	September 5.	September 8.	806	
Parismina.....	United Fruit Co.....	September 5.	September 8.	1,188	81
Ulua.....	United Fruit Co.....	September 6.	September 7.	276	77
Asian.....	Leyland Line.....	September 6.		246	
Abangarez.....	United Fruit Co.....	September 7.	September 7.	2	4
Santa Marta.....	United Fruit Co.....	September 7.	September 8.	117	199
Sivaola.....	United Fruit Co.....	September 7.	September 8.	3	11
Huallaga.....	Peruvian Line.....	September 8.		834	
Ceres.....	Royal West Indian Mail.....	September 8.	September 10.	264	
Manavi.....	Pacific Steam Navigation Co.....	September 8.		760	
Essequibo.....	Pacific Steam Navigation Co.....	September 9.	September 10.	59	50
Balboa.....	Colombian Maritime Co.....	September 9.		585	
St. Mihiel.....	United States Army.....	September 10.		1,360	
San Bruno.....	United Fruit Co.....	September 10.		50	
Laura C. Hall.....	Pacific Metals Transportation Co.....	September 10.		71	

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending September 10, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Newport.....	Pacific Mail Steamship Co.....	September 4.	September 5.	50	
Ansaldo San Giorgio III.					
Ansaldo IV.....	Societa Nazionale di Navigazione.....	September 6.	September 6.	24	
Manavi.....	Societa Nazionale di Navigazione.....	September 7.	September 8.	41	6
Salvador.....	Pacific Steam Navigation Co.....	September 8.	September 8.	1	
Hwah Ping.....	Pacific Steam Navigation Co.....	September 8.	September 8.		1
Laura C. Hall.....	Chinese Government.....	September 9.	September 10.	246	
Achilles.....	Pacific Metals Transportation Co.....	September 10.	September 10.	6	
	Panama Railroad Steamship Line.....	September 9.		12,038	

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies, including the 25 per cent surcharge, effective September 1, 1921:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.31
Brass, sheet, average.....	Lb.	.41
Bronze, Tobin, average.....	Lb.	.31
Cement, at Panama:		
Including bags and surcharge.....	Bag	1.45
Credit for empty bags returned.....	Bag	.10
Cement, at Colon:		
Including bags and surcharge.....	Bag	1.28
Credit for empty bag returned.....	Bag	.10
Charcoal.....	Cwt.	1.63
Gasoline, motor grade.....	Gal.	.40
Lead, sheet, average.....	Lb.	.125
Lead, pig.....	Cwt.	11.68
Lumber, yellow pine or fir, except ceiling.....	M ft. B. M.	77.50
Lumber, ceiling, siding, and flooring, 1" x 6".....	M ft. B. M.	96.25
Lumber, flooring, 1" x 3" and 1" x 4".....	M ft. B. M.	108.75

Lumber, native, prices per 1,000 feet board measure:

Kind.	ROUGH.	
	Green.	Kilned.
Almendra.....	\$106.25	\$118.75
Alcorno.....	106.25	118.75
Alcorno.....	106.25	118.75
Amateo.....	106.25	118.75
Bateo.....	62.50	75.00

Lumber, native, prices per 1,000 feet board measure—Continued:

Kind.	ROUGH.	
	Green.	Kilned.
Cedro Amargo.....	\$106.25	\$118.75
Caoba Blanca.....	106.25	118.75
Guayacan.....	137.50	150.00
María.....	62.50	75.00
Roble.....	62.50	75.00
Nispero.....	137.50	150.00
Notes:		
1. Second grade Alcavú.....		87.50
2. Second grade Caoba Blanca.....		87.50
3. Second grade Cedro Amargo.....		93.75
4. Other than rough standard native lumber required by individuals and companies will be manufactured by the Mechanical Division for their account:		

Commodities.	Unit.	Price.
Metal, yellow.....	Lb.	\$0.34
Oakum, navy, spun.....	Lb.	.175
Oakum, navy, unspun.....	Lb.	.175
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	2.75
Oil, fuel, at Balboa and Cristobal, in drums or barrels, no surcharge.....	Bbl of 42 gals	3.00
Oils, greases, and lubricants:		
Oil, air compressor cylinder.....	Gal.	.56
Oil, ammonia cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.25
Oil, cylinder, dark, marine.....	Gal.	1.075
Oil, cylinder, ice machine, steam.....	Gal.	.91
Oil, dynamo.....	Gal.	.775
Oil, engine, gas, medium, in tins.....	Gal.	.675
Oil, engine, gas, medium, in barrels.....	Gal.	.49
Oil, gas engine, extra heavy, in barrels.....	Gal.	1.04
Oil, gas engine, extra heavy, in cases.....	Gal.	1.125
Oil, gas engine, medium, in drums.....	Gal.	.65
Oil, kerosene, in drums.....	Gal.	.21
Oil, kerosene, in tins.....	Gal.	.375
Oil, linseed, boiled.....	Gal.	2.225
Oil, linseed, raw.....	Gal.	1.625
Oil, locomotive engine.....	Gal.	.34
Oil, lard.....	Gal.	1.975
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Oil, mineral seal.....	Gal.	.35
Oil, nonliquid.....	Lb.	.075
Oil, stationary engine.....	Gal.	.50
Oil, sperm.....	Gal.	2.62
Oil, gas engine, extra heavy.....	Gal.	.55
Oil, signal.....	Gal.	1.38
Oil, valve.....	Gal.	.45
Oil, car.....	Gal.	.21
Grease, gear, black.....	Lb.	.10
Grease, yellow, cup, No. 3.....	Lb.	.125
Grease, yellow, cup, No. 5.....	Lb.	.16
Grease, rod, special.....	Lb.	.21
Grease, tunnel bearing.....	Lb.	.19
Tallow.....	Lb.	.10
Turpentine.....	Gal.	2.26
Turpentine, substitute.....	Gal.	.725
Vaseline.....	Lb.	.125
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.16
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Paint, zinc, white, leaded, 35 per cent in oil.....	Lb.	.16
Rope, manila, 1" diameter.....	C. ft.	.59
Rope, manila, 1 1/2" diameter.....	C. ft.	1.20
Rope, manila, 2" diameter.....	C. ft.	2.15
Rope, manila, 2 1/2" diameter.....	C. ft.	3.64
Rope, manila, 3" diameter.....	C. ft.	4.69
Rope, manila, 3 1/2" diameter.....	C. ft.	6.19
Rope, manila, 4" diameter.....	C. ft.	7.78
Rope, manila, 4 1/2" diameter.....	C. ft.	12.20
Rope, manila, 5" diameter.....	C. ft.	17.49
Rope, manila, 6" diameter.....	C. ft.	23.66
Rope, manila, 8" diameter.....	C. ft.	30.90
Rope, manila, 10" diameter.....	C. ft.	48.50
Rope, manila, 12" diameter.....	C. ft.	73.55
Rope, manila, 14" diameter.....	C. ft.	77.33
Rope, manila, 16" diameter.....	C. ft.	115.61
Soap, laundry.....	Lb.	.06
Soda, ash.....	Lb.	.04
Waste, cotton.....	Lb.	.24
Zinc, boiler plate, 3/8" x 6" x 12".....	Lb.	.125

* For use in special engines in motor schooners operating in the tropics.

Official Circular.

Appointment.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., September 9, 1921.
CIRCULAR No. 661-101:

Effective September 12, 1921, Commander R. W. Ryden, U. S. Navy, is assigned to duty as Superintendent, Mechanical Division, *vice* Commander E. G. Kintner, U. S. Navy, relieved from duty with The Panama Canal.

JAY J. MORROW,
Governor.

Current Net Prices on Coal, Fuel Oil, and Beef.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$15 per ton of 2,240 pounds at Cristobal and \$17 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$15 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or more, the price is \$17 per ton at Cristobal, \$19 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$2.75 per barrel of 42 gallons.

Diesel oil is sold at \$4 per barrel. Cable arrangements should be made in advance of arrival of vessel.

The following are current prices on fresh beef sold from the cold storage plant of the Canal. Prices quoted are United States currency, per pound net:

Beef hinds, 18 cents; beef fores, 13½ cents; beef ribs, entire set, 17 cents; short loins, 24 cents. This beef is from Colombian cattle slaughtered on the Isthmus.

Hogs For Sale.

The following hog stock is offered for sale, f.o.b. the Margarita hog farm:

6 grade boars, three-quarters Duroc, 1 year old.

14 grade boars, bred from three-quarters Duroc sow and full-blooded Hampshire boars, from 3 to 6 months old.

3 boars, seven-eighths Duroc, 4 to 5 months old.

For further information inquire at the Cattle Industry office in Cristobal.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10" dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 63.

PORT OF CRISTOBAL.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
Sept. 7	Santa Marta	United Fruit Co.	Sept. 7	Caribbean	Panama Railroad Cattle Industry.
Sept. 7	Sixola	United Fruit Co.	Sept. 8	Alliance	Panama Railroad Steamship Line.
Sept. 8	Ashville	United States Navy.	Sept. 8	Parismina	United Fruit Co.
Sept. 10	San Bruno	United Fruit Co.	Sept. 8	Santa Marta	United Fruit Co.
Sept. 10	St. Michel	United States Army.	Sept. 8	Sixola	United Fruit Co.
Sept. 10	P. de Saturnegui	Cia. Transatlantica de Barcelona	Sept. 9	Ashville	United States Navy.
Sept. 10	Gen. W. C. Gorgas.	Panama Railroad Steamship Line	Sept. 10	San Bruno	United Fruit Co.
" Gunboat.			" Transport.		
Sept. 7	Meriden	General Steamship Corporation	Sept. 7	Meriden	General Steamship Corporation.
Sept. 9	Hwah Ping.	Chinese Government	Sept. 10	Hwah Ping.	Chinese Government.
			" Other than ships passing through the Canal.		
Sept. 7	San Francisco.	Valparaiso.			

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.
PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address
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The Panama Canal, Washington, D. C.

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at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., September 21, 1921. No. 6.

Grain Shipments.

Between January 1 and August 31, 1921, wheat shipments through the Panama Canal from Pacific to Atlantic aggregated 565,058 tons. They were heaviest in July (99,267 tons) and lightest in April (39,108 tons). The United States contributed 506,583 tons to the total, Canada 3,500 tons, Australasia 36,437 tons, South America 13,648 tons, and the Far East 4,890 tons.

Barley shipments during the same period aggregated 200,788 tons, of which 173,827 tons originated in the United States, 26,934 tons in South America, and 27 tons in Australasia.

Shipments of oats totaled 27,511 tons, of which 18,842 were from South America, and 8,669 tons from Australasia.

All of this grain was consigned to European ports.

French Line (C. G. T.) Service to West Coast of Central and North America.

The General Agent of the Compagnie Generale Transatlantique (French Line) at Cristobal advises that his company will establish a new direct cargo service from Hamburg, Antwerp, Havre, and Bordeaux to Cristobal, Central American and Mexican ports, San Francisco and other north Pacific ports. The service is to be monthly and will employ 5 steamers of 11,000 tons deadweight.

The first sailing is that of the steamship *Ontario*, which was due to leave Bordeaux on September 20. The vessel should reach the Canal about October 10 and is scheduled to proceed to Corinto, La Union, La Libertad, Acajutla, San Jose de Guatemala, Manzanillo, Mazatlan, Guaymas, and San Francisco. On her return voyage she will be due at the Canal about November 25.

The French Line has been operating a cargo service to the west coast of South America since January, 1920, with regular monthly sailings. The itinerary is usually Havre, Antwerp, Hamburg, Bordeaux, Cristobal, Guayaquil, Callao, Mollendo, Arica, Iquique, Antofagasta, and Valparaiso, and return.

The company has also a fortnightly passenger and cargo service to Cristobal by way of West Indian and South American ports. Sailings are from Havre and calls are made at St. Nazaire, Bordeaux, Santander, Guadeloupe, Martinique, Trinidad, La Guaira, Puerto Colombia, and Cristobal. The return voyage is in the reverse order of ports.

Reduction in Rate on Lumber from Pacific Northwest to East Coast of South America.

The Pacific-Argentine-Brazil Line, operating from the west coast of the United States around South America, outward through the Strait of Magellan and homeward through the Panama Canal, has announced a reduction in the tariff on lumber to Montevideo and Brazilian ports, according to the Seattle Chamber of Commerce. The new rate is \$17 per 1,000 feet and was made with the idea of stimulating the movement of lumber from the Pacific Northwest to the east coast of South America.

Classification of Cargo Passing Through the Panama Canal, Showing Origin and Destination of Same, Month of August, 1921.
 COMMODITY STATISTICS.
 ATLANTIC TO PACIFIC.
 (Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—								
	West Indies.	East coast of South America.	Mexico.	Cristobal, C. Z.	Other European.	British Isles.	East coast of United States.	West coast of South America.	West coast of United States.	Far East.	Australasia.	West coast of Canada.	Central America.	Balboa, C. Z.	Hawaiian Islands.
Agricultural implements.	210						210	200		10					
Alcohol	20						20		20						
Ammonia	6,997						6,997			6,997					
Ammunition	20						20		20						
Asphalt	235						235			235					
Auto accessories	42						37	5	37						
Automobiles	134			5			114	23	89		20	2			
Back, ground	15						15			15					
Blood, dried	92									92					
Camel goods:															
Fish	66						64	2	64						
Fruit	10					10		6	10						
Meat	6														
Milk	242						240	2		240					
Vegetables	510						506	4	506						
Other	2,337					5	2,332	5	2,232	100					
China clay	1,162						1,162		1,162						
Coal	24,066			22	10	5,743	18,291	6,893	404	1,965	5,623			9,181	
Carbon, black	36				36		45	36		45					
Carbon, white	45						166	244	100	61					
Chemicals	405						85		85						
Chocolate.	85						517	3,511							
Cement	3,511						76		101			25			
Cocoa	126					50									
Coconuts	10			10				10							
Coffee	1,180			410				85	1,180						
Cold storage (lard).	273			2			271	85	188						
Copper sulphate	10					10			10						
Cotton, raw.	34,482						34,482		9	34,473					
Cotton seed	15			15				15							
Drugs	41						41		41						
Dyes	222						222			222					
Explosives	64					64					64				
Flour	359						20	359							
Glass (glassware)	593			339			567	6	577						
Glucose.	91				2	24	91		91			10			
Industrial earth	50						50			50					

[illegible]

PACIFIC TO ATLANTIC.

(Figures represent tons of 2,240 pounds.)

Commodity.	From—							To—									
	Total.	East coast of South America.	Hawaiian Islands.	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other European.	Cristobal, C. Z.	East coast of Canada.	West Indies.	East coast of Mexico.	South America.
Automobiles	92							3	19	11	11						
Balsa	94								94	94							
Balsam.	7			7								1	6				
Barley	10											10					
Casaca	8				10				8		4						
Peruvian	214								214		30	184					
Quillay	77,661							73,566	4,095	68,724	8,937						
Barley	5,571					190	20	3,409	1,952	1,914	425	1,842	18		1,372		
Beans.	30				30									30			
Birds	30																
Bricks	1,469								1,469	148	185	185	951				
Cacao	7,972						40	7,877		5,868	1,549	555					
Canned goods:	10,921				55			10,903	18	4,660	3,672	2,389				200	
Fish	141					141											
Fruit	836							836		556	280						
Meat	813							811	2	611		2			200		
Milk	1,085							1,085		1,085							
Vegetables	546							546		546							
Other	107						9	98		107							
Celite.	12							12		12							
Charcoal	6,710			4,131					2,579	600		939	5,171				
Chemicals																	
Coffee.																	
Cold storage:																	
Beef	1,430					1,430				1,430							
Butter	1,277					1,277				1,277							
Cheese.	2,739					2,710			29	2,710		20					
Lard	306							306				306					
Mutton.	20,367				50	20,050		50	217	20,367							
Tallow.	1,624					1,489		135		41	1,489	94					
Glaxo.	212					212				212							
Pork	40					40				40							
Other	3,663					3,476	500	187		3,446		217					
Copra.	3,115					35		2,580		1,515		1,600					
Corn.	202							262	202	249	1,575	202					
Cotton, raw	4,140			36				3,842	3,842	258	1,369	3,189	2,058				
Cottonseed oil cake	4,558							1,189	3,369	1,369							

Dye-woods.	180	180	450	18,406	180	16,744	1,620	582	1,620	.....
Flour.	18,946	.....	.....	.....	582	.....	.....	.....	.....	.....
Fruit:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dried.	4,917	.....	.....	4,907	10	86	3,906	925	86	.....
Fresh.	275	.....	.....	275	.....	125	150	125	150	.....
Guan.	5,450	.....	5,450	.....	249	5,450	.....	249	.....	.....
Gum kauri.	249	.....	249	.....	.....	.....	.....	.....	.....	.....
Hair.	1	.....	.....	.....	1	.....	1	.....	.....	.....
Hardwoods.	212	.....	.....	208	.....	.....	190	18	4	.....
Hats.	5	.....	.....	.....	5	.....	.....	895	5	.....
Hay.	965	.....	70	895	.....	70	.....	27	95	.....
Hemp.	604	.....	27	4	95	482	.....	78	220	.....
Honey.	298	.....	78	.....	220	78	.....	.....	100	.....
Hops.	100	.....	.....	100	.....	.....	.....	.....	15	.....
Horns and hoofs.	15	.....	.....	.....	15	.....	.....	.....	.....	.....
Infusorial earth.	25	.....	.....	25	.....	.....	.....	25	.....	.....
Ink.	5	.....	.....	5	.....	.....	.....	5	.....	.....
Iodine.	29	.....	.....	4	.....	.....	.....	.....	.....	.....
Ivory nuts.	1,492	.....	.....	.....	1,492	245	640	607	.....	.....
Jute.	39	.....	.....	38	.....	.....	.....	39	6	.....
Leather.	6	.....	.....	.....	6	.....	.....	.....	.....	.....
Lime.	25	.....	.....	25	.....	.....	.....	.....	25	.....
Liquors.	13	.....	.....	.....	13	.....	.....	.....	.....	.....
Lumber.	35,054	.....	2,524	32,508	22	28,381	371	679	1,671	860 2,592
Manufactured goods:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron and steel.	22	.....	.....	22	.....	22	.....	.....	.....	.....
Machinery.	398	.....	2	392	.....	394	.....	.....	4	.....
Other.	182	.....	.....	182	.....	130	26	.....	.....	.....
Metals:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper.	17,341	.....	.....	8,546	8,795	13,364	53	1,510	2,414	.....
Iron.	800	.....	.....	.....	118	800	.....	.....	.....	.....
Gold and silver.	118	.....	.....	.....	.....	117	.....	.....	1	.....
Tin.	2,334	.....	226	.....	2,108	1,702	632	.....	.....	.....
Lead.	621	.....	.....	.....	621	621	.....	.....	.....	.....
Other.	211	.....	.....	.....	211	.....	4	51	156	.....
Milk, powdered.	26	.....	.....	26	.....	.....	.....	26	.....	.....
Nitrate.	39,349	.....	.....	.....	39,349	31,811	7,538	.....	.....	.....
Oats.	6,605	.....	1,277	.....	5,328	5,479	1,126	.....	.....	.....
Oils:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coconut.	500	.....	500	.....	500	500	.....	500	.....	.....
Crude.	570	.....	.....	32	538	570	.....	570	.....	.....
Raped.	357	.....	357	.....	357	357	.....	357	.....	.....
Vegetables.	1,375	.....	1,375	.....	1,375	1,375	.....	1,375	.....	.....
Wood.	129	.....	129	.....	129	129	.....	129	.....	.....
Ores:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper.	3,349	.....	.....	.....	3,349	3,315	34	.....	.....	.....
Antimony.	345	.....	345	.....	345	345	.....	345	.....	.....
Gold and silver.	146	.....	.....	.....	146	61	2	.....	2	.....
Tin.	2,618	.....	.....	.....	2,618	1,877	705	.....	36	.....
Other.	66	.....	.....	.....	66	62	4	.....	.....	.....
Paper.	4	.....	.....	4	.....	4	.....	.....	.....	.....
Phosphates.	6,650	.....	6,650	.....	.....	6,650	.....	.....	.....	.....

COMMODITY STATISTICS.—PACIFIC TO ATLANTIC—Continued.
(Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—									
	East coast of South America.	Hawaiian Islands.	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other European.	Cristobal, C. Z.	East coast of Canada.	West Indies.	East coast of Mexico.	East coast of South America.
Total.	284					284			284							
Porcelain	1,500		1,500			1,818	3,175	40	1,500			167		309		
Pulpwood	5,033								1,751		2,756					
Rice																
Rubber:																
Raw	689					687	34	2	687	5	150	2				
Manufactured	39			5					34							
Rye	150															
Seed:																
Cotton	4,239															
Clover	647															
Hemp	226								20	3,721	518					
Mustard	137								647	524	103					
Sesamum	100								30	196						
Other	9								137							
Shells, mother-of-pearl	72				9				100							
Silk	95				49	3	20		9		20					
Slate, pencil	16					90	5		52							
Skins and hides	2,571				688	336	16		95		16					
Soap	12		92				446	1,009	1,073	856	274	368				
Sugar	49,406	29,700				14,365	12		44,065		5,341	12				
Talc	164						164		164							
Tea	444					444			444							
Vegetables	145						140	5						140		
Walnuts	708								708							
Wax	11								5	6						
Wheat	80,231				3,600		76,081	550		44,746	35,485					
Wool	10,488				5,442	719	3,350	937	4,155	5,649	887	77				
General	52,984	302	334		873	6,836	39,380	5,039	43,564	3,372	2,940	1,304		1,080	50	674
Totals	521,303	302	29,700	4,785	4,978	56,462	29,308	293,564	206,254	205,364	87,038	13,407	1,705	3,969	2,842	724

Shipment of Fresh Meat from Canada to Europe by Way of the Canal.

The steamship *Kinderdijk* of the Holland-American Line, passing through the Canal on August 26, carried in cold storage 100 tons of mutton, shipped from Vancouver and Seattle to London.

Press dispatches report that this is the first shipment of chilled meat from Canada to Europe by way of the Canal, as it has customarily been handled by refrigerator cars to the Atlantic coast and over Atlantic lines.

The *Kinderdijk* has in cold storage, also, on this voyage, 200 tons of lard from Los Angeles for Hamburg.

In the first 6 months of the current calendar year, 71,036 tons of mutton in cold storage were shipped through the Canal from Australia and New Zealand for the United Kingdom. Other shipments in cold storage from Australasia in that period included 33,720 tons of beef, 30,316 tons of cheese, 19,057 tons of butter, 10,752 tons of tallow, 2,272 tons of glaxo, 2,038 tons of casein, and 16,882 tons of cold storage classified as "other." In all, the cold storage shipments from the Australasian area through the Canal in the 6 months aggregated 186,073 tons.

The cold storage carriage through the Canal from Australia and New Zealand is an old-established service, dating back to the first year of Canal operation. The cold storage service from the west coast to Europe is about a year old, the first vessel of the Holland-American Line, bound from Vancouver and other west coast ports for Europe, having passed through the Canal on September 8, 1920. The demand for cold storage space, homeward bound, on this route has exceeded the supply.

Rate on Apples from Seattle to North European Ports.

Shipping, of August 25, states that the Royal Mail agencies have announced a new rate on apples of \$1.25 per box from Seattle to North Europe ports in refrigerated space. It is expected that the State of Washington will produce one-fifth of all the commercial apples marketed in the United States and that substantial shipments of them will be made through the Canal.

The "Hwah Ping" Beginning Chinese Service Along West Coast.

The Chinese steamer *Hwah Ping*, arriving at Balboa on September 9, from Hongkong by way of Honolulu, is making the initial voyage of the service between Chinese ports and the west coast of the Americas, which was announced in THE PANAMA CANAL RECORD of August 3. The vessel is owned by the Chinese Government and has been chartered by the Chungwha Navigation Company, most of the stock of which is owned by Chinese merchants trading in the west coast countries and Cuba. The head office of the company is in Lima, Peru.

The *Hwah Ping* brought 246 tons of cargo and 138 passengers to Balboa for Panama, in addition to through cargo and passengers. She cleared on September 10 for Valparaiso, via Callao, Arica, Iquique, and Antofagasta. On her return voyage she is due at Balboa about October 15.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Texas.	10	15	05	11	7	42	11	15	17	American.	Americian-Hawaiian Line.	Seattle.	New York.	General.	9,160	9,154	7,033
Suruga.	11	8	10	11	9	44	11	17	20	American.	Barber Lines	Manila.	Philadelphia	General.	6,500	5,177	3,877
Julia Luckenbach.	11	17	54	12	7	34	12	17	00	American.	Luckenbach Line	San Francisco.	New York.	Lumber, general.	8,400	8,543	6,427
Santa Elisa.	12	3	30	12	8	55	12	15	19	American.	Grace Line	Talcahuano	New York.	General.	3,208	3,957	4,285
Hector.	12	4	00	12	14	05	12	21	24	Dutch.	Royal Netherlands W. I. Mail.	Valparaiso.	Europe	General.	4,380	5,677	7,707
Dolphin.	8-23	12	47	13	6	56	13	21	31	American.	United States Navy	Puerto Barrios	Europe	General.	4,380	5,677	7,707
Patient.	12	15	06	13	7	21	13	16	35	American.	United States Navy	Balboa.	Cristobal	General.			
Scota.	12	15	28	13	7	24	13	16	40	American.	United States Navy	Balboa.	Cristobal	General.			
Eastern Merchant.	13	13	00	13	13	49	13	22	05	American.	Williams-Diamond Co. (S. B.).	Seattle.	Antwerp	General.	9,535	8,617	6,297
Kofuku Maru.	13	14	00	14	7	05	14	15	30	Japanese.	Kokusai Kisen Kaisha	Portland.	Norfolk.	Wheat in sacks.	7,444	5,920	4,409
Hellen.	14	8	40	14	10	33	14	18	38	Norwegian.	Brugsaaard Kosterud	San Francisco	Queenstown.	Barley	6,909	5,730	4,011
Kashu Maru.	14	13	50	15	7	40	15	15	35	Japanese.	Kokusai Kisen Kaisha	Portland.	United Kingdom	Wheat	7,177	5,882	4,281
Balboa.	15	0	05	15	8	11	15	16	55	Swedish.	Johnson Line	Vancouver	Scandinavia.	General.	8,193	7,480	5,533
Bradford.	14	6	30	15	8	53	15	16	50	American.	Standard Oil Co. of N. J.	San Francisco	Baton Rouge.	Ballast.	7,318	5,287	3,787
Jamaica.	15	5	45	15	9	52	15	17	45	British.	Pacific Steam Navigation Co.	Tumaco	Cartagena	General.	152	1,187	622
Theodore.	14	19	25	15	10	29	15	18	09	Norwegian.	Fred Olsen & Co.	San Francisco	Christiana	General.	9,000	7,593	5,637
Roosevelt.	15	20	10	16	7	51	16	15	00	American.	Grace Line	Puntarenas	New York.	Nitrate and ore.	4,600	6,610	4,993
Cacique.	16	1	00	16	8	25	16	15	55	British.	New Zealand Shipping Co.	Auckland.	London.	General.	3,953	7,876	5,844
Papara.	16	7	15	16	9	03	16	16	15	Chilean.	South American Steamship Co.	Valparaiso.	Cristobal.	General.	914	4,535	3,068
Aysen.	16	12	10	16	12	44	16	20	00	Japanese.	Toyo Kisen Kaisha	Yokohama.	Tampoco.	Ballast.	9,146	6,385	4,685
Kiyo Maru.	16	12	10	16	12	44	16	20	00	Japanese.	Toyo Kisen Kaisha	Yokohama.	Tampoco.	Ballast.	9,146	6,385	4,685
Palm Branch.	16	12	50	16	13	45	16	21	20	British.	Nautilus Steamship Co.	Valparaiso.	Liverpool.	General.	4,873	4,161	3,133
Quilota.	16	14	30	17	7	05	17	14	30	British.	Pacific Steam Navigation Co.	Guayaquil.	New York.	General.	2,029	4,768	2,956
Asia.	16	21	30	17	7	46	17	15	00	Danish.	East Asiatic Co.	San Francisco	Copenhagen.	General.	9,265	7,396	5,588
Acapulco.	16	21	15	17	10	00	17	17	00	British.	Pacific Steam Navigation Co.	Champerico	Cristobal	General.	287	1,273	706
S. C. 285.	16	7	30	16	16	03	16	16	03	American.	United States Navy	Pedro Miguel	Cristobal	General.			

7 Cruiser.

8 For orders.

9 Cold storage and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Sept. 11	Metapan.	United Fruit Co.	New Orleans.	Sept. 11	Metapan.	United Fruit Co.	Bocas del Toro.
Sept. 11	Caribbean.	Panama Railroad Cattle Industry.	Cartagena.	Sept. 12	Asian.	Leyland Line	New Orleans.
Sept. 12	Heredia.	United Fruit Co.	New Orleans.	Sept. 13	P. de Sarstegui	Cia Transatlantica	Ponce via Colombia.
Sept. 12	Pan American.	Texas Oil Co.	New Orleans.	Sept. 14	Caribbean.	Panama Railroad Cattle Industry.	Puerto Colombia.
Sept. 13	San Gil.	United Fruit Co.	Boston.	Sept. 14	Heredia.	United Fruit Co.	New Orleans via Port Limon.
Sept. 13	Toloca.	United Fruit Co.	New York.	Sept. 14	San Gil.	United Fruit Co.	Boston via Port Limon.
Sept. 14	Metapan.	United Fruit Co.	Bocas del Toro.	Sept. 14	Metapan.	United Fruit Co.	New Orleans.
Sept. 15	Perou.	French Line.	St. Nazaire.	Sept. 14	St. Mibel.	United States Army.	New York.
Sept. 16	Cristobal.	Panama Railroad Steamship Line.	Norfolk.				

10 Tug.

(Continued on page 92, column 2.)

Length, Beam, and Draft of Commercial Vessels in July.

A classification of the commercial vessels passing through the Panama Canal in July, 1921, by length, beam, and salt water draft shows the following:

	Atlantic to Pacific.	Pacific to Atlantic.	All vessels.	Per cent of all vessels.
<i>Length.</i>				
Less than 100 feet.....	3	2	5	2.4
100 to 200 feet.....	8	2	10	4.9
200 to 300 feet.....	14	16	30	14.6
300 to 400 feet.....	31	37	68	33.0
400 to 500 feet.....	46	41	87	42.2
Over 500 feet.....	3	3	6	2.9
Total ships.....	105	101	206	100.0
Aggregate length (feet).....	37,466.0	37,614.7	75,080.7	
Average length (feet).....	356.8	372.4	364.4	
<i>Beam.</i>				
Less than 30 feet.....	11	5	16	7.8
30 to 40 feet.....	10	14	24	11.7
40 to 50 feet.....	20	21	41	19.9
50 to 60 feet.....	57	50	107	51.9
60 to 70 feet.....	3	11	14	6.8
Over 70 feet.....	4		4	1.9
Total ships.....	105	101	206	100.0
Aggregate beam (feet).....	5,046.6	5,002.7	10,049.3	
Average beam (feet).....	48.1	49.5	48.8	
<i>Draft.</i>				
Less than 15 feet.....	20	14	34	16.6
15 to 20 feet.....	32	21	53	25.7
20 to 25 feet.....	33	33	66	32.0
25 to 30 feet.....	20	31	51	24.7
Over 30 feet.....		2	2	1.0
Total ships.....	105	101	206	100.0
Aggregate draft (feet).....	2,073.0	2,164.1	4,237.1	
Average draft (feet).....	19.7	21.4	20.5	
	<i>Feet.</i>	<i>Feet.</i>		
Vessel of greatest length.....	517.0	530.4		
Vessel of greatest beam.....	72.0	69.4		
Vessel of greatest draft.....	28.1	30.9		

Length, Beam, and Draft of Commercial Vessels in August.

A classification of the commercial vessels passing through the Panama Canal in August, 1921, by length, beam, and salt water draft shows the following:

	Atlantic to Pacific.	Pacific to Atlantic.	All vessels.	Per cent of total vessels.
<i>Length.</i>				
Less than 100 feet.....	4	3	7	3.0
100 to 200 feet.....	3	3	6	2.6
200 to 300 feet.....	14	14	28	11.8
300 to 400 feet.....	41	36	77	32.6
400 to 500 feet.....	55	58	113	47.9
Over 500 feet.....	3	2	5	2.1
Total ships.....	120	116	236	100.0
Aggregate length (feet).....	44,352.0	43,407.0	87,759.0	
Average length (feet).....	369.6	374.2	371.9	
<i>Beam.</i>				
Less than 30 feet.....	7	5	12	5.1
30 to 40 feet.....	9	9	18	7.6
40 to 50 feet.....	23	25	48	20.3
50 to 60 feet.....	74	70	144	61.0
60 to 70 feet.....	6	6	12	5.1
Over 70 feet.....	1	1	2	0.9
Total ships.....	120	116	236	100.0
Aggregate beam (feet).....	5,921.8	5,838.7	11,760.5	
Average beam (feet).....	49.3	50.3	49.8	

	Atlantic to Pacific.	Pacific to Atlantic.	All vessels.	Per cent of total vessels.
<i>Draft.</i>				
Less than 15 feet.....	23	10	33	14.0
15 to 20 feet.....	37	18	55	23.3
20 to 25 feet.....	32	45	77	32.6
25 to 30 feet.....	28	42	70	29.6
Over 30 feet.....		1	1	0.5
Total ships.....	120	116	236	100.0
Aggregate draft (feet).....	2,377.7	2,586.4	4,964.1	
Average draft (feet).....	19.8	22.3	21.0	
	<i>Feet.</i>	<i>Feet.</i>		
Vessel of greatest length.....	518.0	511.6		
Vessel of greatest beam.....	72.0	78.8		
Vessel of greatest draft.....	29.0	31.0		

Swedish Shipping and the Panama Canal.¹

The number of Swedish vessels using the Canal each fiscal year since it was first opened to navigation is shown below:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915.....	8	10	18
1916.....	5	8	13
1917.....	7	11	18
1918.....	12	14	26
1919.....	12	17	29
1920.....	10	9	19
1921.....	15	10	25
Totals.....	69	79	148

The number of ships was greatest in the two last years of the war, but the difference was not so marked as in the case of Norwegian and Danish shipping. The traffic of the fiscal year 1921 was distributed as follows:

SWEDISH SHIPPING USING THE PANAMA CANAL DURING THE FISCAL YEAR, 1921;² SEGREGATION BY TRADE ROUTES.

	Vessels.	Cargo tons.
Europe to the west coast of South America.....	6	16,903
West coast of South America to Europe.....	1	5,700
Europe to the west coast of North America.....	2	5,127
West coast of North America to Europe.....	9	61,952
East coast of United States to Australasia.....	6	39,237
Europe to Australasia.....	1	
Totals.....	25	128,919

Of the 6 vessels sailing to Australasia from the United States 3 carried coal cargoes from Norfolk and 3 sulphur cargoes from Gulf ports. All of these vessels belonged to the Swedish Transatlantic Steamship Company. All of the vessels in the trade between Europe and the west coast of the two Americas, with two exceptions, belonged to the Johnson Line (Rederiaktiebolaget Nordstjernan).

Chilean Shipping and the Panama Canal.²

Chilean vessels made only 63 transits through the Panama Canal during the fiscal year 1921, as compared with 79 in 1920 and 93 in 1919. A similar decline was noted in the case of Peruvian shipping. In both cases the commercial depression of the past year is the

¹ This is the sixth of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, and Danish shipping.

² This is the seventh of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, Danish, and Swedish shipping.

obvious cause, aggravated, as concerns Chile, by stagnation in the nitrate trade upon which the country is peculiarly dependent. The detailed record of the past 7 years is shown in the table below:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915.....	16	19	35
1916.....	16	17	33
1917.....	50	49	99
1918.....	50	46	96
1919.....	48	45	93
1920.....	38	41	79
1921.....	40	23	63
Totals.....	258	240	498

Of the 40 vessels southbound last year 25 were owned by the Compañía Sudamericana de Vapores (Chilean Line), 4 were naval vessels, 4 were colliers and supply ships operated by the Chilean Government, 2 were Grace Line tugs, and the remaining 5 belonged to various owners. Of the 23 northbound vessels the Chilean Line owned 22 and the Chilean Government 1.

Of the southbound vessels carrying cargo 22 were from Cristobal to Chile with 13,000 tons, 1 from the United Kingdom to Chile with 650 tons, 8 from the United States to Chile with 29,517 tons, and 1 from Barbados to Chile with 2,500 tons. Of the northbound vessels carrying cargo, 20 were from Chile to Cristobal with 9,735 tons, and 2 from Chile to the United States with 6,335 tons. The total southbound cargo was 45,667 tons, and the total northbound cargo 16,070 tons.

The Chilean Line vessels carry passengers as well as cargo.

An interesting feature, and one deemed of sufficient importance to be mentioned in the annual message of the President of Chile, was an initial shipment of fresh fruit in cold storage from Valparaiso to New York. As the Chilean summer corresponds with the winter of the northern hemisphere, hopes are entertained that Chile can supply the New York market with fresh fruit at a time when none can be had from other sources of supply.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended September 17:

Collier *Achilles*, manufacture and install new plug piston in starboard H. P. cylinder; fit 1 set of snap rings and furnish 1 set of spares; manufacture 1 governor weight for turbo generator; repair 1 indicator and 2 gauges; manufacture and install control valve; clean water side of boilers and sweep tubes; repair lifeboat bottom and air tanks; install braces on awning stanchions; repair galley stove and baker's oven; manufacture griddle iron and repair skylight lever; remove, clean, and replace sea valve strainers; repair rope guard; true up starboard H. P. piston rod and refit taper end to crosshead; refit crosshead slipper bolts and install dowels; calk shell seams on starboard No. 7 tank; weld starboard and bottom butt on after-shoe plate; manufacture new wireless spar; build up starboard reversing valve and face off seat; calk leaky rivets on forepeak tank shell plates; electric-weld rivets and cracks on after-peak tank; tug *Cocoli*, perform light repairs on dynamo engine and water pump; steamship *Bradford*, straighten eccentric rod and fit strap.

PREVIOUSLY REPORTED.

U. S. submarines *O-15*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; *O-16*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; steamship *Panama*, reboiling and general overhaul to machinery and hull; tug *Mariner*, dock, stage, clean and paint bottom; launch *Pacific*, general repairs to hull; barges *No. 176*, dock, stage, clean and paint bottom; *No. 194*, dock, stage, clean and paint bottom.

The following vessels were at the Cristobal shops for repairs during the week ended September 19:

Steamships *Colon*, make new eccentric strap and valve stem for blower engine; manufacture 1 set of wrist pin brasses and pin; make 4 keys for blower engine; repair air casing on both port boilers; locate and repair leak in fresh water line, No. 2 hold; test 2 ammonia gauges; *Cristobal*, machine bull ring to suit new snap rings; install water shed over oil discharge pipe; calk pilot house top and bridge shelter; repair flanges on hatch strongbacks and miscellaneous steward department repairs; *Acajulla*, dock and undock, clean and paint bottom; overhaul anchor shackles as directed; U. S. S. P. 1841, dock and undock; clean and paint bottom; remove present forecastle deck and replace with wooden deck; remove smokestack; renew housing over engine and fire rooms, install 1 hatch cover; install towing bitts and cleats; make and fit towing bridle, etc.; U. S. S. *Patuxent*, repair 8 KW reciprocating dynamo; weld broken piece at top of cylinder; straighten connecting rod and machine; manufacture, fit, and install crosshead brasses, bolts and gibs; manufacture, fit, and install cast-iron cylinder liner; line up dynamo and engine, etc.; U. S. S. *Caesar*, rebore or manufacture and install new liners in water end of main feed pump; manufacture and install piston rods; manufacture, fit, and install piston rod packing gland on H. P. cylinder, main engine; furnish and install 2 gate valves as directed; steamship *Hattie Luckenbach*, dredge *Marshal Foch*, launch *Garcoyle*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *Eagle No. 31*, overhaul sea valves and zincs; motor ship *Satoe*, general overhauling, including dry-docking; steamship *Toedjoe*, install bulwarks; alter crew accommodations, etc.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending September 17, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Newport.....	Pacific Mail Steamship Co.....	.....	September 14.....	.....	1,801
Asian.....	Leyland Line.....	.....	September 12.....	.....	239
Huallaga.....	Peruvian Line.....	.....	September 14.....	.....	410
Manavi.....	Pacific Steam Navigation Co.....	.....	September 14.....	.....	36
Balboa.....	Colombian Maritime Co.....	.....	September 12.....	.....	.....
St. Mihiel.....	United States Army.....	.....	September 14.....	.....	72
San Bruno.....	United Fruit Co.....	.....	September 10.....	.....	.....
Laura C. Hall.....	Pacific Metals Transportation Co.....	.....	September 12.....	.....	19
P. de Satrustegui.....	Spanish Line.....	September 11.....	September 12.....	113	4,393
Caribbean.....	Panama Railroad Cattle Industry.....	September 11.....	September 13.....	301	31
Gen. W. C. Gorgas.....	Panama Railroad Steamship Line.....	September 11.....	September 15.....	1,576	1,532
Heredia.....	United Fruit Co.....	September 12.....	September 14.....	541	6
Noorderdijk.....	Royal Netherlands W. I. Mail.....	September 13.....	September 13.....	50	25
Tolosa.....	United Fruit Co.....	September 13.....	September 14.....	317	23
San Gil.....	United Fruit Co.....	September 13.....	September 14.....	15	205
Metapan.....	United Fruit Co.....	September 14.....	September 14.....	1	5
Garfield.....	W. R. Grace & Co.....	September 15.....	September 15.....	143	.....
Oriana.....	Royal Mail Steamship Co.....	September 15.....	September 15.....	2	95
Jamaica.....	Pacific Steam Navigation Co.....	September 15.....	.....	134	.....
Perou.....	Cia. Generale Transatlantique.....	September 15.....	September 17.....	27	637
Aysen.....	Compañia Sudamericana Vapores.....	September 16.....	.....	914	.....
Cristobal.....	Panama Railroad Steamship Line.....	September 16.....	.....	9,606	.....
Colon.....	Panama Railroad Steamship Line.....	September 17.....	.....	203	.....
Camito.....	United Fruit Co.....	September 17.....	September 17.....	15	3

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending September 17, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Laura C. Hall.....	Pacific Metals Transportation Co.....	September 12.....	September 13.....	.....	69
Theodore Roosevelt.....	Fred Olsen & Co.....	September 14.....	September 15.....	165	.....
Newport.....	Pacific Mail Steamship Co.....	September 15.....	September 15.....	.....	3
Quillota.....	Pacific Steam Navigation Co.....	September 16.....	September 17.....	7	.....

Coal at St. Thomas.

The following has been received from the Government Secretary of the Virgin Islands of the United States:

As a matter of information, and for such publication as you may think proper, the Governor of the Virgin Islands directs me to inform you that a firm operating a coaling hulk in the harbor of St. Thomas, has stated that they are willing to meet all comers at \$13.25, U. S. currency, per ton.

Executive Order.

Authorizing the Extension of Passports Issued Prior to June 4, 1920.

By virtue of the authority vested in me by Section 4075 of the Revised Statutes of the United States, as amended by the Act of Congress approved June 14, 1902, and with reference to the provisions of Section 3 of the Act of Congress of June 4, 1920, entitled, "An Act making appropriations for the diplomatic and consular service for the fiscal year ending June 30, 1921," I hereby authorize the Secretary of State directly or through diplomatic, consular or other officers of the United States, or chief or other executive officers of the insular possessions of the United States to extend passports issued prior to June 4, 1920, so that they may be valid for a period not to exceed two years from the date of issuance.

WARREN G. HARDING.

THE WHITE HOUSE,
August 16, 1921.

[No. 3535.]

October Weather Probabilities.

During the month of October, 1921, the following weather conditions may be expected at the Canal entrances. Predictions are based on the records at Colon and Balboa Heights for the past 14 and 15 years, respectively.

Winds—Light, variable winds will prevail over the Atlantic coast with an average hourly velocity of about 7 miles. The prevailing direction of the wind is usually from the southeast, although a considerable percentage of west and northwest winds may be expected during the month. A maximum velocity of from 30 to 38 miles an hour may be expected during the passage of local rain or thunder squalls.

Over the Pacific coast and the interior, light northwest winds will prevail with an average hourly velocity of about 6 miles. Here, too, during occasional rain or thunder squalls, the maximum velocity of the wind may exceed 30 miles an hour, but these wind storms are invariably of short duration.

Rain—The average October rainfall at the Atlantic entrance of the Canal is 15.07 inches, and on the Pacific side 10.17 inches, these averages being for periods of 51 and 24 years, respectively. About 25 days with rain may be expected on the Atlantic coast, and 22 on the Pacific coast, while the average number of days with heavy rain (1 inch or more) has been 6 at the Atlantic entrance and 3 at the Pacific. Throughout the length of the Canal, the greatest part of the rainfall occurs during the daytime, the heaviest rainfall generally occurring between the hours of 1 p. m. and 4 p. m. However, at this season of the year, the percentage of daytime rainfall is higher over the interior and Pacific coast than over the Atlantic coast, and heavy rainfall may be expected on the Atlantic side during the early morning hours. Over both coasts the time of least rainfall is from 8 to 9 a. m.

Fogs—No fogs are likely to occur at either Canal entrance, but night and early morning fogs will be numerous over the interior. About 25 nights with fog may be expected over the Gaillard Cut section of the Canal, but as all fogs lift or are dissipated before 8.30 a. m., they should not prove a hindrance to navigation.

Temperature—The average shade air temperature will be about 79° F. on both coasts. On the Atlantic coast the temperature is not likely to rise above 90° F., or fall lower than 70° F., while on the Pacific side the maximum temperature may be as high as 94° F., and the minimum as low as 68° F. The mean daily range of temperature will be about 10° F. on the Atlantic coast and 14° F. on the Pacific coast.

Barometric pressure—The average sea-level atmospheric pressure will be approximately 29.85 inches over both coasts. The maximum pressure for the month is not likely to exceed 29.95 inches, or the minimum to be lower than 29.70 inches.

Relative humidity—The humidity of the atmosphere should average about 87 per cent over both coasts. The daily range in humidity is greater on the Pacific coast than on the Atlantic side, the average nighttime humidity being higher and the midday

humidity lower than on the Atlantic side. The figures for years of record are 94 and 74, on the Pacific side, and 92 and 78 on the Atlantic.

Storms—The Isthmus is seldom visited by violent or widespread atmospheric disturbances although rain, wind, or thunder storms of more or less limited extent are of common occurrence, and may be expected quite frequently during the month. Rough weather may be experienced occasionally to the northward of the Atlantic entrance, as this is the season of the West Indian hurricane. The path of these storms lies well to the northward of the Isthmus, but a rough sea accompanied by brisk winds may be expected outside the breakwater, following the passage of one of these storms. Generally cloudy weather will continue over both coasts, and smooth seas are usually experienced at the Pacific entrance during the month of October.

Tides—Tidal fluctuations on the Atlantic side do not affect navigation, as the extreme tidal range at Colon is less than 2 feet.

Panama (Balboa) tide predictions for the month are presented in the following table:

Day of—		Time and Height of High and Low Water.				Day of—		Time and Height of High and Low Water.				Day of—		Time and Height of High and Low Water.			
W.	Mo.					W.	Mo.					W.	Mo.				
S	1	3:03	9:28	3:29	9:49	W	12	0:12	6:27	12:43	6:55	S	23	1:48	7:44	2:13	8:16
		17.1	-0.4	17.2	-0.6			12.4	5.0	12.2	4.6			2.6	15.0	2.2	14.6
S	2	3:51	10:13	4:18	10:32	Th	13	1:12	7:26	1:34	7:50	M	24	2:47	8:40	3:15	9:14
		17.8	-1.1	17.6	-1.0			13.0	4.4	12.9	4.0			3.2	14.2	2.8	14.0
M	3	4:37	10:57	5:04	11:13	F	14	1:53	8:15	2:16	8:38	Tu	25	3:55	9:48	4:23	10:31
		17.9	-1.4	17.6	-0.8			13.8	3.5	13.6	3.3			3.5	13.6	3.1	13.9
Tu	4	5:23	11:38	5:49	11:55	S	15	2:31	8:57	2:55	9:15	W	26	5:04	11:10	5:33	11:49
		17.7	-1.1	17.2	-0.2			14.5	2.6	14.3	2.5			3.5	13.6	3.1	14.3
W	5	6:07	12:20	6:32	.....	S	16	3:08	9:35	3:33	9:53	Th	27	6:14	12:25	6:40	.....
		17.1	-0.4	16.5	.....			15.1	1.6	14.9	1.8			2.9	14.1	2.6	.....
Th	6	0:35	6:49	1:04	7:16	M	17	3:46	10:09	4:08	10:26	F	28	0:55	7:20	1:27	7:43
		0.8	16.2	0.7	15.5			15.7	1.0	15.3	1.3			15.0	2.1	15.0	1.9
F	7	1:23	7:32	1:52	8:00	Tu	18	4:19	10:44	4:44	11:02	S	29	1:50	8:18	2:21	8:39
		2.0	15.2	2.0	14.4			16.0	0.5	15.6	1.1			15.9	1.1	15.8	1.2
S	8	2:14	8:18	2:44	8:47	W	19	4:57	11:20	5:22	11:37	S	30	2:41	9:10	3:11	9:29
		3.3	14.0	3.2	13.4			16.2	0.3	15.8	1.1			16.6	0.2	16.4	0.5
S	9	3:11	9:06	3:43	9:46	Th	20	5:34	11:56	6:01	.....	M	31	3:30	9:55	3:59	10:12
		4.4	12.8	4.2	12.5			16.2	0.4	15.7	.....			17.1	-0.5	16.8	0.1
M	10	4:16	10:12	4:48	11:00	F	21	0:16	6:14	12:35	6:42						
		5.1	12.0	4.7	12.1			1.4	16.0	0.8	15.5						
Tu	11	5:22	11:34	5:53	.....	S	22	0:58	6:56	1:21	7:26						
		5.3	11.8	4.9	.....			1.9	15.6	1.4	15.1						

The tides are placed in the order of their occurrence; the *times* of high and low tides are shown on the upper lines. The figures in boldfaced type are hours and elevations between noon and midnight; *ante meridian* figures are given in the ordinary lightfaced type. The time is Cosmopolitan Standard for the meridian 75° W.

The *elevations* of the water are shown on the second line for each day; a comparison of consecutive heights will indicate whether it is high or low water. Heights are reckoned from mean low water springs, which is 8.3 below mean sea level and is the datum of soundings on the Coast and Geodetic Survey charts for this region. The depth of water may accordingly be estimated by adding the tabular height of the tide to the soundings, unless a minus (-) sign is before the height, in which case it is to be subtracted. The annual inequality or variation in the mean sea level is included in the predictions.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Rupert Nichols.....	21035	Barbados.....	Panama.....	Quartermaster.....	August 26, 1921.
Pedro Rodrigues.....	47938	Costa Rica.....	Colon.....	Panama Railroad.....	August 30, 1921.
Francis Davis.....	21220	Jamaica.....	Red Bank.....	Supply Department.....	August 31, 1921.
Robert Herman.....	33901	St. Lucia.....	Panama.....	Dredging Division.....	September 9, 1921.
Jose Morales.....	45491	Panama.....	Miraflores.....	Cattle Industry.....	September 13, 1921.

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THE PANAMA CANAL RECORD

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Volume XV. Balboa Heights, C. Z., September 28, 1921. No. 7.

CANAL WORK IN AUGUST.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of August, 1921:

BALBOA HEIGHTS, C. Z., September 20, 1921.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of August, 1921.

CANAL TRAFFIC.

Commercial traffic through the Panama Canal during the month of August was greater than for any month since March, 1921. The month of March established a high record in tonnage of vessels and tolls earned, but in the months following March there was a distinct decline, a part of the general business and marine depression over the world.

The extent of this decline in the Canal traffic, and of the recovery in August, are indicated in the following summary of the traffic through the Canal during the past 6 months:

1921.	Number of ships.	Panama Canal net tonnage.	Registered gross tonnage.	Tolls.	Tons of cargo.
March.....	255	1,112,818	1,417,220	\$1,105,536.55	1,084,563
April.....	227	955,503	1,203,087	927,977.09	907,613
May.....	210	864,617	1,092,602	835,882.77	792,735
June.....	192	761,477	960,857	751,964.12	694,720
July.....	206	810,613	1,022,802	804,503.11	708,982
August.....	236	965,276	1,219,817	955,380.78	839,273

The total number of vessels and craft of all kinds through the Panama Canal, as compared with the preceding month and with the corresponding month of last year, was as follows:

	August, 1921.	July, 1921.	August, 1920.
Commercial vessels.....	236	206	265
United States Government vessels.....	31	23	30
Panaman Government vessels.....		5	
Launches (nonseagoing, under 10 tons).....	7	3	5
Total vessels and craft through Canal.....	274	237	301

COMMERCIAL TRAFFIC.¹

A comparison of the commercial traffic for August, 1921, with that of the preceding month, of the corresponding month of 1920, and of the average month's traffic for the past 12 months, shows the following:

	August, 1921.	July, 1921.	August, 1920.	Average per month for past year.
United States equivalent net tonnage.....	792,442	652,439	782,415	775,057
Panama Canal net tonnage.....	965,276	810,613	951,345	948,635
Registered gross tonnage.....	1,219,817	1,022,802	1,208,471	1,203,957
Registered net tonnage.....	780,945	650,368	770,320	766,440
Tolls earned.....	\$955,380.78	\$804,503.11	\$936,209.44	\$938,187.69
Tons of cargo carried.....	839,273	708,982	1,040,740	934,993

¹ Commercial traffic includes all vessels of 10 tons or more transiting the Panama Canal, with the exception of vessels owned or chartered by the Government to carry Government supplies.

Ocean-going commercial vessels passing through the Canal averaged 7.6 ships per day. The average tonnage, tolls, and tons of cargo carried, per commercial vessel, as compared with last month's traffic, and with August, 1920, were as follows:

Average per vessel.	August, 1921.	July, 1921.	August, 1920.
United States equivalent net tonnage.....	3,358	3,167	2,941
Panama Canal net tonnage.....	4,090	3,935	3,576
Registered gross tonnage.....	5,169	4,965	4,543
Registered net tonnage.....	3,309	3,157	2,896
Tolls.....	\$4,048.22	\$3,905.35	\$3,493.32
Tons of cargo (all vessels).....	3,556	3,441	3,972
Tons of cargo (laden vessels only).....	4,217	3,961	4,752

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

While all cargo-carrying vessels pay tolls on their net tonnage, as determined by established rules for measuring their available cargo-carrying space, yet the rate of such tolls per cargo ton furnishes interesting data, varying as it does not only in different ships, but in vessels of different nationalities.

The average rate of tolls paid on each ton (2,240 pounds) of cargo passing through the Panama Canal from the Atlantic to the Pacific was \$1.18 and from the Pacific to the Atlantic, \$0.88 per ton, with a general average of \$0.99 per ton. The average rate paid per cargo ton, by nationality of vessels, is shown in the following statement:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.31	\$1.28	\$1.29
Chilean.....	2.23	1.53	1.72
Danish.....	1.55	.65	.75
Dutch.....	.73	.65	.66
French.....	36.29	.81	1.47
Japanese.....	.97	.70	.78
Norwegian.....	1.68	.67	.85
Peruvian.....	8.25	1.03	1.77
Swedish.....	.79	.....	.79
United States.....	1.08	.84	.93
Average rate, all ships, August, 1921.....	1.18	.88	.99
Average rate, all ships, July, 1921.....	1.44	.83	1.05
Average rate, all ships, June, 1921.....	1.11	.93	1.02

The difference in the rate of tolls paid per cargo ton, by vessels of various nationalities is due to some vessels being but lightly loaded while others are carrying capacity cargoes. This also accounts for the variation in the rates per cargo ton as between northbound and southbound cargo for ships of the same nationality.

The lowest rate of tolls per cargo ton paid by any vessel passing through the Panama Canal during the month of August, 1921, was paid by the steamship *North American*, British registry, bound from Valparaiso to New York, and carrying 3,200 tons of nitrate and copper ore, on which tolls of \$1,495 were assessed, or a rate of 46.7 cents per cargo ton.

COMMODITY STATISTICS.

A classification of all cargo passing through the Panama Canal during the month of August, 1921, by commodities, giving the origin and destination of the same, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of September 21, 1921. A brief summary of the principal items is shown here-with:

CARGO PASSING FROM ATLANTIC TO PACIFIC.

Commodity.	August, 1921.		July, 1921.	
	Cargo tons.	Per cent of total cargo.	Cargo tons.	Per cent of total cargo.
Oils:				
Crude.....	36,454	21.2	14,491	11.7
Refined.....	28,685		15,635	
Other.....	2,117		.....
Manufactured goods:				
Iron and steel.....	28,373	11.5	52,574	28.7
Machinery.....	3,695		6,043	
Railroad material.....	2,796		8,222	
Other.....	1,821		7,175	

CARGO PASSING FROM ATLANTIC TO PACIFIC—continued.

Commodity.	August, 1921.		July, 1921.	
	Cargo tons.	Per cent of total cargo.	Cargo tons.	Per cent of total cargo.
Cotton, raw.....	34,482	10.8	26,083	10.1
Coal and coke.....	24,066	7.6	8,258	3.2
Sulphur.....	19,350	6.1		
Sugar.....	7,145	2.3		
Ammonia.....	6,997	2.2	921	0.2
Canned goods.....	3,171	1.0	861	0.2
Metals.....	5,286	1.7	8,575	3.3
Cement.....	3,511	1.1	1,871	0.7
Rosin.....	2,431	0.6	1,885	0.7
Other and general.....	107,590	33.9	105,846	41.0
Total cargo.....	317,970	100.0	258,440	100.0

CARGO PASSING FROM PACIFIC TO ATLANTIC.

Wheat.....	80,231	15.4	99,267	22.1
Barley.....	77,661	14.9	27,780	6.2
Sugar.....	49,406	9.5	48,394	10.8
Nitrate.....	39,349	7.5	26,051	5.8
Lumber.....	35,054	6.7	31,699	7.0
Cold storage and food products:				
Mutton.....	20,367	6.1	21,329	7.5
Other.....	11,291		12,496	
Canned goods:				
Fruit.....	10,291	4.2	10,482	5.3
Fish.....	7,972		10,596	
Miscellaneous.....	2,875		2,906	
Metals:				
Copper.....	17,341	4.2	9,259	2.4
Other.....	4,084		1,752	
Flour.....	18,946	3.6	28,940	6.4
Wool.....	10,468	2.0	14,030	3.1
Coffee.....	6,710	1.3	6,675	1.5
Oats.....	6,605	1.3	3,185	0.7
Phosphates.....	6,650	1.3	7,500	1.6
Beans, peas, lentils.....	5,571	1.1	5,762	1.3
Seed:				
Cotton.....	4,239	1.1	5,380	1.3
Clover.....	647		312	
Hemp.....	226			
Mustard.....	137			
Sesame.....	100			
Rice.....	5,033	1.0	7,767	1.7
Fruit (dried, 4,917 tons; fresh, 275 tons).....	5,192	1.0	3,274	0.7
Cottonseed oil cake.....	4,558	0.9	717	0.2
Cotton, raw.....	4,140	0.8	3,281	0.7
Copra.....	3,115	0.6	2,450	0.5
Oils:				
Vegetable.....	1,375	0.5	1	1.6
Coconut.....	500		7,073	
Rapeseed.....	357			
Other.....	703		4	
Skins and hides.....	2,571	0.4	4,658	1.0
Ivory nuts.....	1,492	0.3	2,368	0.5
Cacao.....	1,469	0.3	4,072	0.9
Other and general.....	73,947	14.0	41,082	9.2
Total cargo.....	521,303	100.0	450,542	100.0

UNITED STATES COASTWISE TRAFFIC.

The number of vessels engaged in the United States coastwise traffic, passing through the Panama Canal during August, 1921, together with their tonnage, tolls, and tons of cargo carried, as compared with the preceding months of the calendar year was as follows:

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.20	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	15	70,477	72,103.75	92,659
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792

UNITED STATES SHIPPING BOARD VESSELS.

The number of vessels under control of the United States Shipping Board passing through the Panama Canal during the month of August, 1921, together with their Panama Canal net tonnage, tolls, and tons of cargo carried, as compared with preceding months of the calendar year, was as follows:

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897

TRAFFIC BY TRADE ROUTES.

Statements attached to this report show the origin and destination of all cargo passing through the Panama Canal as accurately as the same can be segregated from the cargo declarations submitted by the ships' masters (*see* pages 110 and 111). Below is given a summary of the traffic passing over the principal trade routes, showing the number of vessels, their Panama Canal net measurement, and the amount of cargo carried. The vessels shown as in ballast represent cargo-carrying vessels only; warships, tugs, yachts, etc., not being included as "ballast".

Trade routes.	Total vessels.			Vessels in ballast.	
	Number.	Panama Canal net tonnage.	Cargo.	Number.	Panama Canal net tonnage.
<i>Atlantic to Pacific.</i>					
United States coastwise.....	19	86,278	55,387	3	14,176
United States to Far East.....	18	90,256	112,454		
Europe to west coast of United States.....	17	68,334	684	16	64,545
Cristobal to west coast of South America.....	12	17,372	3,443		
Europe to west coast of South America.....	11	47,902	23,500		
United States to west coast of South America.....	11	31,053	10,949	1	3,741
Europe to Australasia.....	6	42,837	16,256		
United States to Australasia.....	5	27,714	31,150		
United States to Balboa, C. Z.....	4	17,564	19,114		
Europe to west coast of Canada.....	3	16,695	8,828	1	6,334
Mexico to west coast of South America.....	2	9,587	17,718		
Cristobal, C. Z., to Central America.....	2	1,624	1,128		
Colombian coastwise.....	2	972	810		
Cristobal, C. Z., to west coast of United States.....	1	2,206	1,560		
Miscellaneous trade routes.....	7	26,825	14,979	2	7,759
Totals, Atlantic to Pacific, August, 1921.....	120	487,219	317,970	23	96,555
Totals, Atlantic to Pacific, July, 1921.....	105	403,051	258,440	14	27,510
Totals, Atlantic to Pacific, August, 1920.....	143	492,504	539,954	27	61,826
<i>Pacific to Atlantic.</i>					
West coast of United States to Europe.....	23	109,893	174,198		
United States coastwise.....	23	110,899	129,792		
West coast of South America to east coast of United States.....	13	42,871	47,717		
Australasia to Europe.....	11	64,147	54,877		
West coast of South America to Cristobal, C. Z.....	11	16,825	8,490		
West coast of South America to Europe.....	10	45,656	45,625		
Far East to east coast of United States.....	4	20,628	29,308		
Balboa, C. Z., to Mexico.....	3	15,435		3	15,435
West coast of Canada to Europe.....	2	12,134	17,702		
Australasia to east coast of United States.....	2	4,514	1,585		
West coast of United States to Cristobal, C. Z.....	2	3,799	2,473		
West coast of Central America to Cristobal, C. Z.....	2	1,398	1,195		
Balboa, C. Z., to east coast of United States.....	1	8,063		1	8,063
West coast of United States to east coast of Mexico.....	1	5,035		1	5,035
West coast of Canada to east coast of United States.....	2	7,304	5,962		
West coast of South America to east coast of Mexico.....	1	4,274		1	4,274
Miscellaneous trade routes.....	4	5,182	2,379	1	2,512
Warships.....	1	(^c)			
Totals, Pacific to Atlantic, August, 1921.....	116	478,057	521,303	7	35,310
Totals, Pacific to Atlantic, July, 1921.....	101	407,562	450,542	6	30,383
Totals, Pacific to Atlantic, August, 1920.....	123	458,841	500,786	17	75,338

^c Spanish battleship with displacement tonnage of 14,345.

LATIN-AMERICAN TRAFFIC.

The number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality, were as follows:

ATLANTIC TO PACIFIC.

Nationality.	No. of vessels	TONNAGE.				Tolls.	Cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
British.....	19	36,772	47,765	62,362	37,858	\$45,943.90	24,270
United States.....	16	43,220	52,735	68,745	43,267	54,018.30	49,736
Norwegian.....	4	9,937	11,398	13,354	9,279	11,893.92	5,476
Peruvian.....	3	3,708	7,750	12,325	6,031	4,635.00	562
Chilean.....	2	3,260	5,645	6,367	3,888	4,075.00	1,824
Danish.....	1	4,257	5,317	6,645	4,244	5,321.25	3,421
French.....	1	3,600	4,146	5,765	3,681	4,500.00	124
Japanese.....	1	3,645	4,230	5,761	3,556	4,556.25	3,977
Dutch.....	1	2,224	3,607	3,623	2,229	2,780.00	3,809
August, 1921.....	48	110,623	142,593	184,947	114,033	137,723.62	93,199
July, 1921.....	42	78,594	99,714	136,403	82,573	94,585.33	55,525
August, 1920.....	75	.....	193,894	259,052	161,784	.....	196,087

PACIFIC TO ATLANTIC.

British.....	17	42,109	51,702	71,429	44,729	\$49,911.38	30,147
United States.....	17	47,521	56,772	73,793	47,044	49,489.31	36,399
Norwegian.....	3	7,113	8,602	8,433	5,052	8,598.25	12,484
Chilean.....	3	6,028	9,201	12,399	6,833	7,535.00	4,914
Peruvian.....	3	4,010	8,315	12,666	6,614	5,012.50	4,867
French.....	1	4,368	4,369	5,248	3,329	5,242.80	6,482
Japanese.....	1	3,360	4,446	5,446	3,311	4,200.00	6,814
Dutch.....	1	1,598	3,083	2,652	1,619	1,997.50	4,067
August, 1921.....	46	116,107	146,490	192,066	118,531	131,986.74	106,174
July, 1921.....	44	99,862	129,887	166,419	102,303	112,330.18	84,368
August, 1921.....	76	.....	219,997	293,983	183,661	.....	228,342

CLASSIFICATION OF COMMERCIAL TRAFFIC.¹

A statement of this month's commercial traffic, classified (1) according to the nationality of the various ships passing through the Panama Canal, and (2) segregating laden and unladen vessels, is shown in the following tabulations:

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Number and nationality of commercial vessels passing through the Canal:			
British.....	51	32	83
Chilean.....	2	3	5
Costa Rican.....	1	.....	1
Danish.....	2	3	5
Dutch.....	2	3	5
French.....	1	1	2
Japanese.....	9	14	23
Norwegian.....	5	5	10
Peruvian.....	3	3	6
Spanish.....	.....	1	1
Swedish.....	1	.....	1
United States.....	43	51	94
Totals, August, 1921.....	120	116	236
Totals, July, 1921.....	105	101	206
Totals, August, 1920.....	143	123	266
United States equivalent net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	170,882	107,173	278,055
Chilean.....	3,260	6,028	9,288
Costa Rican.....	25	.....	25

¹ Commercial traffic includes all ocean-going vessels transiting the Canal, excepting vessels owned or chartered by the United States Government.

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States equivalent net tonnage of commercial vessels passing through the Canal, by nationality—Continued:			
Danish.....	8,824	12,999	21,823
Dutch.....	5,356	11,321	16,677
French.....	3,600	4,368	7,968
Japanese.....	35,323	57,451	92,774
Norwegian.....	11,125	14,451	25,576
Peruvian.....	3,708	4,010	7,718
Spanish.....		(¹)	(¹)
Swedish.....	4,004		4,004
United States.....	148,188	180,346	328,534
Totals, August, 1921.....	394,295	398,147	792,442
Totals, July, 1921.....	324,330	328,109	652,439
Totals, August, 1920.....	407,933	374,482	782,415
Panama Canal net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	215,497	127,139	342,636
Chilean.....	5,645	9,201	14,846
Costa Rican.....	18		18
Danish.....	9,935	15,419	25,354
Dutch.....	7,075	15,217	22,292
French.....	4,146	4,369	8,515
Japanese.....	39,319	65,216	104,535
Norwegian.....	12,726	17,082	29,808
Peruvian.....	7,750	8,315	16,065
Spanish.....		(¹)	(¹)
Swedish.....	4,249		4,249
United States.....	180,859	216,099	396,958
Totals, August, 1921.....	487,219	478,057	965,276
Totals, July, 1921.....	403,051	407,562	810,613
Totals, August, 1920.....	492,504	458,841	951,345
Registered gross tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	264,438	167,271	431,709
Chilean.....	6,367	12,399	18,766
Costa Rican.....	28		28
Danish.....	12,618	19,265	31,883
Dutch.....	7,307	17,958	25,265
French.....	5,765	5,248	11,013
Japanese.....	51,793	84,230	136,023
Norwegian.....	15,422	19,001	34,423
Peruvian.....	12,325	12,666	24,991
Spanish.....		(¹)	(¹)
Swedish.....	4,594		4,594
United States.....	227,195	273,927	501,122
Totals, August, 1921.....	607,852	611,965	1,219,817
Totals, July, 1921.....	508,670	514,132	1,022,802
Totals, August, 1920.....	622,073	586,398	1,208,471
Registered net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	165,440	105,060	270,500
Chilean.....	3,888	6,833	10,721
Costa Rican.....	18		18
Danish.....	8,829	13,048	21,877
Dutch.....	4,438	11,214	15,652
French.....	3,681	3,329	7,010
Japanese.....	34,689	55,993	90,682
Norwegian.....	10,451	11,763	22,214
Peruvian.....	6,031	6,614	12,645
Spanish.....		(¹)	(¹)
Swedish.....	3,452		3,452
United States.....	146,154	180,020	326,174
Totals, August, 1921.....	387,071	393,874	780,945
Totals, July, 1921.....	321,763	328,605	650,368
Totals, August, 1920.....	396,312	374,008	770,320

¹ Spanish cruiser of 14,345 tons displacement.

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Tolls levied against commercial vessels passing through the Canal, by nationality:			
British.....	\$197,703.26	\$130,835.28	\$328,538.54
Chilean.....	4,075.00	7,535.00	11,610.00
Costa Rican.....	18.75		18.75
Danish.....	10,862.85	16,248.75	27,111.60
Dutch.....	5,276.96	14,151.25	19,428.21
French.....	4,500.00	5,242.80	9,742.80
Japanese.....	43,341.40	71,091.25	114,432.65
Norwegian.....	12,850.08	17,675.60	30,525.68
Peruvian.....	4,635.00	5,012.50	9,647.50
Spanish.....		7,172.50	7,172.50
Swedish.....	5,005.00		5,005.00
United States.....	176,748.94	215,398.61	392,147.55
Totals, August, 1921.....	465,017.24	490,363.54	955,380.78
Totals, July, 1921.....	405,220.18	399,282.93	804,503.11
Totals, August, 1920.....	493,418.85	442,790.59	936,209.44
Tons of cargo carried by commercial vessels passing through the Canal, by nationality:			
British.....	105,397	96,607	202,004
Chilean.....	1,824	4,914	6,738
Danish.....	3,421	25,071	28,492
Dutch.....	3,809	21,769	25,578
French.....	124	6,482	6,606
Japanese.....	44,898	101,122	146,020
Norwegian.....	5,476	26,263	31,739
Peruvian.....	562	4,867	5,429
Swedish.....	6,300		6,300
United States.....	146,159	234,208	380,367
Totals, August, 1921.....	317,970	521,303	839,273
Totals, July, 1921.....	258,440	450,542	708,982
Totals, August, 1920.....	539,954	500,786	1,040,740
A further classification of the above commercial traffic:			
Cargo-carrying vessels—			
Laden.....	92	107	199
Ballast.....	23	7	30
Passenger ships.....	2		2
Battleship.....		1	1
Yacht.....	1		1
Sea-going launches.....	2	1	3
Total commercial vessels.....	120	116	236
Tonnage of above vessels:			
Panama Canal net measurement—			
Cargo-carrying vessels—			
Laden.....	374,070	442,732	816,802
Ballast.....	96,555	35,319	131,874
Passenger ships.....	16,386		16,386
Yacht.....	184		184
Sea-going launches.....	24	6	30
Displacement tonnage of battleship.....		14,345	14,345
Tolls paid on above vessels:			
Cargo-carrying vessels—			
Laden.....	\$375,215.00	\$457,663.50	\$832,878.50
Ballast.....	73,006.74	25,523.04	98,529.78
Passenger ships.....	16,612.50		16,612.50
Yacht.....	159.75		159.75
Battleship.....		7,172.50	7,172.50
Sea-going launches.....	23.25	4.50	27.75
Total tolls, commercial vessels.....	465,017.24	490,363.54	955,380.78
Motor ships through the Canal.....			
Panama Canal net tonnage of above.....	4,601	24,093	28,694
Vessels in ballast, charged laden rate, on account of excess fuel.....			
Net tonnage of above, Panama Canal measurement.....	2		2
	8,059		8,059
Cargo carried by commercial vessels.....	317,970	521,303	839,273
Average rate of tolls per cargo ton ¹	\$1.18	\$0.88	\$0.99
Average rate of tolls per cargo ton ²	1.41	.93	1.11

¹ Laden vessels only.² Including cargo-carrying vessels in ballast.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.¹

The following statement shows the tonnage of, and amount of cargo carried by United States Government vessels passing through the Panama Canal during the month of August, 1921. This traffic passes through the Panama Canal free of tolls; if tolls had been assessed against these vessels, however, at commercial rates, the amounts collected would have been as indicated below.

In this statement is also included the number and tonnage of launches transiting the Canal, together with tolls collected thereon. Although paying tolls they are included in the noncommercial traffic, being small nonseagoing vessels of under 10 tons measurement.

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States Navy vessels:			
Battleships.....	1	2	3
Cruisers.....	2	2	4
Tugs.....	3	2	5
Gunboats.....	1	1	2
Minesweepers.....	1	1	2
Subchasers.....	2	1	3
Colliers.....	3	1	4
Ammunition ship.....	1		1
Store ship.....	1		1
Total naval vessels.....	15	10	25
United States Army vessels:			
Mineplanters.....	1	2	3
Launches.....	2		2
Total Army vessels.....	3	2	5
Vessels chartered to carry Government supplies.....	1		1
Total vessels through Canal free of tolls.....	19	12	31
Tonnage of above vessels:			
Panama Canal net tonnage—			
Naval vessels.....	28,307	4,124	32,431
Army vessels.....	423	449	872
Vessels with Government supplies.....	4,917		4,917
Total Panama Canal net tonnage.....	33,647	4,573	38,220
Displacement tonnage, naval vessels.....	43,390	62,913	106,303
Cargo carried by above vessels:			
Naval vessels..... tons.	28,396		28,396
Vessels with Government supplies..... tons.	7,467		7,467
Total cargo through Canal free of tolls.....	35,863		35,863
Tolls which above vessels would have paid if assessed at commercial rates:			
Naval vessels.....	\$54,597.60	\$34,425.78	\$89,023.38
Army vessels.....	304.56	323.28	627.84
Vessels with Government supplies.....	5,713.75		5,713.75
Total.....	60,615.91	34,749.06	95,364.97
Launches through the Canal.....	2	5	7
Net tonnage of above, Panama Canal measurement.....	14	11	25
Tolls collected on above.....	\$15.95	\$8.25	\$24.20

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of August, 1921, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Vessels passing through the Canal:			
Commercial.....	120	116	236
United States Government vessels.....	19	12	31
Launches and miscellaneous craft.....	2	5	7
Total vessels and craft.....	141	133	274

¹ Vessels, barges, tugs, launches, etc., in the service of The Panama Canal are not included in this statement of traffic.

	Cristobal.	Balboa.	Total.
Tonnage of above vessels:			
Panama Canal net measurement—			
Commercial vessels.....	487,219	478,057	965,276
United States Government vessels.....	33,647	4,573	38,220
Launches, etc.....	14	11	25
Displacement tonnage—			
Commercial vessels.....		14,345	14,345
United States Government vessels.....	43,390	62,913	106,303
Cargo carried by above vessels:			
Commercial..... tons..	317,970	521,303	839,273
United States Government vessels..... tons..	35,863		35,863
Total cargo through the Canal..... tons..	353,833	521,303	875,136
Deck cargo included in the above..... tons..	462	2,666	3,128
Vessels entering port but not transiting Canal:			
Number entered.....	58	7	65
Number cleared.....	58	7	65
Registered gross tonnage of above:			
Entering.....	272,723	110,211	382,934
Clearing.....	277,007	110,211	387,218
Registered net tonnage of above:			
Entering.....	164,221	102,378	266,599
Clearing.....	166,526	102,378	268,904
Vessels transiting the Canal and handling passengers or cargo at port:			
Number entering.....	48	45	93
Number clearing.....	51	45	96
Registered gross tonnage of above:			
Entering.....	198,198	215,620	413,818
Clearing.....	204,953	215,620	420,573
Registered net tonnage of above:			
Entering.....	126,875	136,941	263,816
Clearing.....	130,275	136,941	267,216
All vessels entering and clearing, including those transiting the Canal:			
Number entering.....	298	253	551
Number clearing.....	307	252	559
Registered gross tonnage of above:			
Entering.....	1,659,032	1,487,239	3,146,271
Clearing.....	1,716,603	1,449,615	3,166,218
Registered net tonnage of above:			
Entering.....	1,106,763	1,028,629	2,135,392
Clearing.....	1,149,112	993,439	2,142,551
Transit cargo arriving..... tons..	857,845	850,223	1,708,068
Transit cargo clearing..... tons..	893,656	850,223	1,743,879
Local cargo arriving..... tons..	52,861	37,294	90,155
Local cargo shipped..... tons..	12,228	181	12,409
Cargo received for transshipment..... tons..	23,168	6	23,174
Cargo transhipped..... tons..	16,405	75	16,480
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received..... tons..	41,256	1,905	43,161
Dispatched..... tons..	29,184	314	29,498
Rehandled..... tons..	2,303	85	2,388
Stevedored..... tons..	25,787	89	25,876
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	60	4	64
Panama Railroad vessels.....	5		5
United States Army vessels.....	2	1	3
Total vessels supplied with bunker coal.....	67	5	72
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	17,454	508	17,962
Panama Railroad vessels..... tons..	723		723
United States Army vessels..... tons..	106	2	108
Total coal supplied to vessels..... tons..	18,283	510	18,793

	Cristobal.	Balboa.	Total.
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	670	793	1,463
Panama Railroad, excepting vessels..... tons..	461	30	491
United States Army, excepting vessels..... tons..	224	31	255
Individuals and companies..... tons..	326		326
Total coal furnished from Panama Canal deposits, Aug., 1921. tons..	19,964	1,364	21,328
Total coal furnished from Panama Canal deposits, July, 1921. tons..	25,465	2,145	27,610
Total coal furnished from Panama Canal deposits, Aug., 1920. tons..	32,197	7,118	39,315
Coal on hand, September 1, 1921..... tons..	125,114	25,066	150,180
Coal on hand, August 1, 1921..... tons..	111,354	14,688	126,042
Coal received during August, 1921..... tons..	21,602	9,181	30,783
Taken up on survey..... tons..	12,122	2,561	14,683
<i>United States Navy coal account.</i>			
Issued to U. S. Navy, including vessels..... tons..	622	5,623	6,245
Coal on hand, September 1, 1921..... tons..	60,723	9,276	69,999
Coal on hand, August 1, 1921..... tons..	61,345	14,899	76,244
Fuel oil issues:			
To Panama Canal departments..... bbls..	5,013	20,186	25,199
To Panama Railroad..... bbls..	813		813
To Army and Navy (including 1 vessel)..... bbls..	593	238	831
Total issues..... bbls..	6,419	20,424	26,843
Fuel oil on hand, September 1, 1921..... bbls..	79,838	85,461	165,299
Fuel oil on hand, August 1, 1921..... bbls..	86,257	101,448	187,705
Received from United States Shipping Board..... bbls..		4,437	4,437
Diesel oil issued during the month..... bbls..	487	10	497
Diesel oil on hand, September 1, 1921..... bbls..	51,127	966	52,093
Diesel oil on hand, August 1, 1921..... bbls..	51,614	976	52,590
Oil pumped for individuals and companies..... bbls..	463,786	193,267	657,053
Miscellaneous transfers..... bbls..	6,415		6,415
Total oil handled..... bbls..	477,107	213,701	690,808
Vessels furnished with commissary supplies:			
Commercial, other than Panama Railroad.....	134	42	176
Panama Railroad.....	8		8
United States Government.....	13	18	31
Total vessels furnished supplies.....	155	60	215
Commissary sales to commercial vessels:			
Ice.....	\$2,589.63	\$315.70	\$2,905.33
Wholesale groceries.....	3,004.09	715.55	3,719.64
Wholesale cold storage.....	15,286.40	3,590.78	18,877.18
Laundry.....	3,367.63	980.04	4,347.67
Miscellaneous.....	558.04	91.17	649.21
Total.....	24,805.79	5,693.24	30,499.03
Commissary sales to Panama Railroad vessels:			
Ice.....	\$358.80		\$358.80
Wholesale groceries.....	1,257.63		1,257.63
Wholesale cold storage.....	5,076.32		5,076.32
Laundry.....	1,763.49		1,763.49
Miscellaneous.....	448.84		448.84
Total.....	8,905.08		8,905.08
Commissary sales to United States Government vessels:			
Ice.....	\$357.72	\$814.18	\$1,171.90
Wholesale groceries.....	597.93	7,174.27	7,772.20
Wholesale cold storage.....	3,526.34	50,120.76	53,647.10
Laundry.....	21.86	33.94	55.80
Miscellaneous.....	264.29	907.74	1,172.03
Total.....	4,768.14	59,050.89	63,819.03
Total commissary sales to all vessels:			
August, 1921.....	\$38,479.01	\$64,744.13	\$103,223.14
July, 1921.....	38,494.65	33,112.18	71,606.83
August, 1920.....	90,579.18	45,243.97	135,823.15
Admeasurement certificates:			
United States equivalent issued or made.....	34	3	37
Measured for Panama Canal.....	19	7	26
United States equivalent or Panama Canal corrected.....	31	8	39

	Cristobal.	Balboa.	Total.
Services of harbor equipment:			
Tugs, total operating hours.....	461	295	756
Launches, total operating hours.....	1,279	1,251	2,530
Vessels repaired at Panama Canal shops:			
Commercial.....	45	9	54
United States Government.....	4	4	8
Canal equipment.....	3	1	4
Vessels dry-docked:			
Commercial.....	5	2	7
United States Government.....	2	3	5
Canal equipment.....	2	8	10
Services to American vessels:			
Crews shipped.....	2		2
Crews paid off.....	2		2
Shipping articles written.....	2		2
Marine notes of protest noted.....	33	4	37
Services to American seamen:			
Seamen shipped.....	327	69	396
Seamen discharged.....	297	112	409
Seamen lodged and subsisted.....	15	21	36
Seamen repatriated.....	11	22	33
Seamen deserted.....	16		16
Wages of American seamen:			
Total wages earned.....	\$12,969.06	\$15,101.65	\$28,070.71
Deductions approved by Deputy Shipping Commissioner.....	4,412.88	4,029.45	8,442.33
Balance due seamen.....	8,556.18	11,072.20	19,628.38
Paid to seamen.....	6,923.08	10,800.47	17,723.55
Received on deposit for seamen.....	1,633.10	271.73	1,904.83
Clearances issued.....	176	128	304
Bills of health issued.....	177	132	309
<i>Movement of passengers.</i>			
Disembarking at Canal ports:			
First class—			
From Atlantic ports.....	1,030	27	1,057
From Pacific ports.....	210	186	396
Total, first class.....	1,240	213	1,453
Other than first class—			
From Atlantic ports.....	574	16	590
From Pacific ports.....	92	182	274
Total, other than first class.....	666	198	864
Total disembarking at Canal ports.....	1,906	411	2,317
Embarking from Canal ports:			
First class—			
For Atlantic ports.....	1,664	7	1,671
For Pacific ports.....	212	105	317
Total, first class.....	1,876	112	1,988
Other than first class—			
For Atlantic ports.....	1,120		1,120
For Pacific ports.....	117	105	222
Total, other than first class.....	1,237	105	1,342
Total embarking from Canal ports.....	3,113	217	3,330
Remaining on board vessels:			
First class—			
Bound from Atlantic to Pacific ports.....	1,320	536	1,856
Bound from Pacific to Atlantic ports.....	490	836	1,326
Bound from Atlantic to Atlantic ports.....	312		312
Bound from Pacific to Pacific ports.....		27	27
Total, first class.....	2,122	1,399	3,521

	Cristobal.	Balboa.	Total.
Remaining on board vessels—Continued:			
Other than first class—			
Bound from Atlantic to Pacific ports.....	614	1,560	2,174
Bound from Pacific to Atlantic ports.....	349	380	729
Bound from Atlantic to Atlantic ports.....	302		302
Bound from Pacific to Pacific ports.....		262	262
Total, other than first class.....	1,265	2,202	3,467
Total, remaining on board.....	3,387	3,601	6,988
Total passengers arriving.....	5,293	4,012	9,305
Total passengers departing.....	6,500	3,818	10,318
Arrivals in excess of departures.....		194	
Departures in excess of arrivals.....	1,207		
Departures in excess of arrivals.....			1,013

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of August, 1921, as compared with that of the preceding month, and of the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	111	113	224	7	14	21	245
Pedro Miguel.....	114	116	230	17	29	46	276
Miraflores.....	115	116	231	18	25	43	274
Total lockages, August, 1921.....	340	345	685	42	68	110	795
Total lockages, July, 1921.....	297	302	599	48	40	88	687
Total lockages, August, 1920.....	341	399	740			114	854

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	121	123	244	18	32	50	294
Pedro Miguel.....	119	120	239	35	63	98	337
Miraflores.....	119	120	239	37	66	103	342
Total vessels, August, 1921.....	359	363	722	90	161	251	973
Total vessels, July, 1921.....	306	326	632	123	87	210	842
Total vessels, August, 1920.....	358	440	798			250	1,048

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	36	37	44
Canal equipment.....	14	61	59
Total noncommercial vessels.....	50	98	103

The consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
Lockages.....	<i>Cubic feet.</i> 935,490,000	<i>Cubic feet.</i> 860,170,000	<i>Cubic feet.</i> 821,380,000
Leakage.....	20,000,000	15,260,000	67,000,000
Maintenance.....			3,320,000
Total consumption, August, 1921.....	955,490,000	875,430,000	891,700,000
Total consumption, July, 1921.....	805,760,000	804,450,000	739,030,000
Total consumption, August, 1920.....	1,129,670,000	1,046,560,000	999,430,000

METEOROLOGY AND HYDROGRAPHY.

The rainfall over the Canal Zone and immediate vicinity, for the month of August, 1921, was above normal everywhere except at Bohio. Totals ranged from 8.06 inches at Pedro Miguel River to 30.32 inches at Porto Bello. The greatest amount of rainfall recorded on any one day was 8.37 inches at Porto Bello on the 10th. The estimated rainfall over Gatun Lake watershed area was 16.46 inches, as compared with an 11-year mean of 12.20 inches; while over the Chagres River watershed area above Alhajuela it was 20.68 inches, as compared with a 20-year mean of 14.83 inches.

The discharge of the Chagres River, at Alhajuela, was 3,416 c. f. s., being 12 per cent above the 20-year August mean of 3,038 c. f. s. This is the first month in the past 10, and the fifth month in the past 34 months, in which the discharge of the Chagres River was above normal. The maximum momentary discharge was 20,600 c. f. s. at elevation 100.50 feet on August 10. There were 3 rises of 5 feet or more at Alhajuela during the month.

The Gatun Lake watershed total yield for the month was 10,448 c. f. s., being 33 per cent above the 11-year August mean of 7,858 c. f. s. The maximum total yield for the month of August, of record, was 11,656 c. f. s., in 1917, while the minimum total yield was 4,956 c. f. s. in 1911. The net yield for the month was 10,043 c. f. s. The lake varied in elevation from 86.69 feet on the 11th to 85.46 feet on the 26th. A decrease in storage of 3.60 billion cubic feet was effected by lowering the lake approximately 1 foot.

The draft on the lake for lockages and power was 2,234 c. f. s., as compared with 2,123 c. f. s. for last month, and 2,444 c. f. s. for August, 1920. The ratio of water expended for power and lockages was 2.33 to 1.

The Gamboa pumping plant and the Brazos Brook reservoir drew 34.6 and 38.5 million cubic feet, respectively, from the lake.

Miraflores Lake varied in elevation from 54.09 feet to 53.20 feet, and ended at elevation 53.53 feet midnight the 31st. Eighteen spillway operations were made at Miraflores spillway during the month.

There were 3 very slight seismic tremors recorded on the 11th, and another slight tremor occurred on the 12th. All 4 disturbances were of such light intensity that no estimate could be made as to their distance or direction.

Temperature records for the month of August are given below:

Station.	Maximum.	Minimum.	Monthly mean.
Balboa Heights.....	92	72	80.6
Gamboa.....	90	71	79.6
Alhajuela.....	91	69	78.8
Gatun.....	88	70	80.0
Colon.....	89	72	80.6

The following gives a comparison of the monthly rainfall by sections for August, 1921, and August, 1920:

Section.	Rainfall.		Rainy days.	
	1921.	1920.	1921.	1920.
	Inches.	Inches.		
Pacific.....	9.65	9.54	20	23
Central.....	15.31	11.38	27	26
Atlantic.....	20.91	22.30	28	29

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., is shown in comparative form, in the following tabulation:

	August, 1921.	July, 1921.	August, 1920.
Gross output, KWH:			
Gatun hydroelectric station.....	5,522,900	5,541,100	6,111,200
Miraflores steam plant.....	2,100	500	16,020
Combined gross output.....	5,525,000	5,541,600	6,127,220
Water consumption..... cubic feet.	4,186,412,827	4,110,077,816	4,469,210,000
Oil consumption..... barrels.	1,990	2,006	2,006
Power distributed to consumers..... KWH.	4,663,235	4,601,656	5,059,485
Loss of power in plant auxiliaries, transmission, and transformation.....	861,765	939,944	1,067,735
Per cent of loss of power to gross output.....	15.6	17.0	17.4

Miscellaneous electrical repairs and installations of electrical equipment were made on 17 vessels at Cristobal and 28 vessels at Balboa during the month. There were 438 work orders issued for work to be performed by the Electrical Division during the month of August, as compared with 429 for July.

The following new construction work was under progress during the month, with completion on July 31 and August 31 as follows:

	Per cent completed.	
	July 31.	August 31.
Installation of new 8,400 KVA transformer and new tie-line equipment at Gatun substation....	75	80
Installation of 2 complete feeder equipments at Balboa substation.....	95	95
Installation of electrical equipment at hydroelectric station.....	50	55

SHOP, FOUNDRY, AND DRY DOCK WORK.

At the Balboa shops, miscellaneous repairs were made on 14 vessels, the more important of which were as follows:

Work on the steamship *Panama*, which was begun in the preceding month, progressed satisfactorily. The vessel was placed in dry dock and all necessary underwater work done, including the renewal of several shell plates below the water line; renewing the lignum-vitæ strips in the stern tubes; the replacing of a number of loose and bad rivets at various points below the water line, and building up the riveting under the keel with electric welding. At the end of the month, work on the boiler room double bottom and within the boiler room enclosure had proceeded to such a point that the vessel was ready to receive the new boilers, the old boilers having been removed immediately after word was received to go ahead with repairs.

Work was started in repairing the bow plating of the steamship *Solana*, damaged in collision at Tampico and temporarily repaired pending a favorable opportunity for making permanent repairs.

The routine docking of the Dredging Division fleet was started at the end of the month.

At the Cristobal shops, miscellaneous repairs were made on 52 vessels during the month, the more important of which were as follows:

The steamship *Balboa* was docked, bottom cleaned and painted, and lost motion taken up in valve gear, steering engine. Liners on sides of low pressure slide valve main engine were manufactured and installed, and lateral play taken up.

On the steamship *West Isleta*, piston rod, complete for main air pump, was manufactured and fitted; holes were drilled at ends of cracks in bottom of pump cylinders, and copper patches fitted and installed over same; 9 sets of pump valves and 2 piston rings for H. P. cylinder were manufactured.

The U. S. S. *Eagle No. 31* was docked and the bottom cleaned and painted, and the sea valves and zincs overhauled. Four mud drum casings were repaired, holes for pins in planetary gears built up, small end of pin was turned down, and reduction gear assembled.

Clapet *No. 7* was docked and the bottom cleaned and painted. The sea valves were ground in, bottom intake renewed, 2 ash pit doors manufactured, valves and pipes in boilers repaired, and the hull patched.

The steamship *Caribbean* was docked, cleaned and painted; and stay bolts, nuts, washers, piston rods, bushings, etc., were manufactured and installed as needed.

There were 22 vessels dry-docked during the month, 9 at Cristobal and 13 at Balboa.

The effect of the financial depression in shipping in curtailing repairs to vessels has been very manifest at the Balboa plant. Almost all of the work performed during the month on vessels has been on those owned by The Panama Canal, the Panama Railroad Steamship Company, and the Army and Navy. There was one stretch of 10 days in which there was no vessel under repair except the steamship *Panama* and an Army tug. Had it not been for the steamship *Panama*, it would not have been possible to retain the organization for proper steamship repair facilities at the Pacific end of the Canal.

The output of the Mechanical Division in patterns, castings, and foundry production for August, 1921, as compared with the preceding month, was as follows:

	August, 1921.			July, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron	5	1,035	29,240	10	872	57,596
Steel	2	19	16,170	7	51	38,813
Brass	15	483	11,737	10	442	8,279

There has been but very little demand for new castings. This has produced a situation which has required the reduction of the force in the foundry at the Balboa shops to one-third of its former strength, nearly all of the reduction coming during the month of August.

The routine inspection, hostling, and repair of equipment for the Panama Railroad Company was carried on during the month. Four hundred and thirty job orders were completed during the month, with 252 remaining uncompleted on August 31.

Work on the 5 towing locomotives being built by The Panama Canal is progressing satisfactorily; 2 of the locomotives having been completed except for the installation of hand brakes.

DREDGING DIVISION.

There was no movement of consequence at Cucaracha slide during the month. A slow, general movement has continued just north of Purple Rock, being recorded as far back as 1,200 feet east from the prism line, and a slight independent movement occurred to the south of this rock. Little, if any, of this material has reached the Canal prism. A dipper dredge, working from the 1st to the 21st of the month in front of this slide, removed during that time 98,850 cubic yards of material, making a total of 2,835,900 cubic yards removed from this slide area since February 22, 1920.

Culebra and Barge Repair slides have showed no important movements during the month. During the month dredges removed 86,550 cubic yards of material from East Barge Repair slide, and 6,700 cubic yards of material from West Barge Repair slide.

No inconvenience to Canal traffic was occasioned by any of the slides.

The total excavation in August, including earth and rock, was 560,100 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment.
	Earth.	Rock.			
98,850		98,850	Maintenance.....	<i>Gaillard Cut, Cucaracha.</i> 1805-00 to 1814-00 E.	<i>Gamboa.</i>
25,400	10,400	25,000	Maintenance.....	<i>Gaillard Cut—East Barge Repair Slide.</i> 1746-00 to 1756-50 E.	<i>Gamboa.</i>
51,150	15,350	35,800	Maintenance.....	1756-00 to 1756-00 E.	<i>Cascadas.</i>
6,700	4,000	2,700	Maintenance.....	<i>Gaillard Cut—West Barge Repair Slide.</i> 1739-00 to 1741-00 W.	<i>Gamboa.</i>
33,000	11,000	22,000	Maintenance.....	<i>Pacific entrance.</i> 2296-00 to 2303-00 W.	<i>Cascadas.</i>
54,000	54,000		Maintenance.....	2108-60 to 2124-00 E.	<i>No. 84.</i>
87,000	87,000		Maintenance.....	2174-00 to 2190-00 E.	<i>No. 84.</i>
53,000	53,000		Maintenance.....	2171-00 to 2181-00 W.	<i>No. 86.</i>
68,000	68,000		Maintenance.....	2158-70 to 2174-00 E.	<i>No. 86.</i>
73,000	73,000		Maintenance.....	2128-30 to 2155-30 E.	<i>No. 86.</i>
560,100	375,750	184,350			

The material excavated at the various stations, was disposed of as follows:

	<i>Cubic yards.</i>
Dumped north of Gamboa.....	191,500
Arsenal fill.....	104,000
San Juan fill.....	17,000
Flats east of Canal.....	161,000
Flats west of Canal.....	53,000
At sea, Pacific entrance.....	33,000
North of Gold Hill.....	600
Total.....	560,100

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations, and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	August, 1921.	July, 1921.	August, 1920.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	740,414,000	734,425,000	598,914,825
Filtration plants.....	455,145,000	449,527,000	477,394,000
Water consumed by Panama City.....	97,595,000	90,690,000	83,685,000
Water consumed by Colon.....	54,005,250	55,490,000	57,144,000
Sales of water to vessels.....	12,239,017	9,709,842	14,345,592

Construction work, as itemized below, was under progress during the month, with completion on July 31 and August 31 as shown:

	Per cent completed.	
	July 31.	August 31.
New wash water tank, Miraflores.....	95	100
Construction of new concrete sea-wall, Santo Tomas Hospital.....	43	50
Extension of roads, new Santo Tomas Hospital.....	8	6
Concrete roof, low service reservoir.....	52	70
Grading at Silver City, Mount Hope.....	45	60
Storm sewer, Balboa.....	97	100
Storm drain, buildings 3 and 4, Balboa shops.....	20	100
Storm sewer, Diablo road, at lumber shed.....		45
Foundation for statue of Balboa.....		32

Municipal work performed for the Army and Navy is separately reported.

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	Men.	Women.	Children.	Totals.		
				August, 1921.	July, 1921.	August, 1920.
Americans.....	2,758	1,990	2,308	7,056	7,280	8,271
Europeans.....	138	28	65	231	238	226
West Indians.....	5,168	2,611	5,387	13,166	12,969	10,835
Total, August, 1921.....	8,064	4,629	7,760	20,453		
Total, July, 1921.....	8,103	4,668	7,716		20,487	
Total, August, 1920.....	8,696	4,093	6,543			19,332

WORKING FORCE—NUMBER OF EMPLOYEES.

The total number of employees as of August 24, 1921, was 12,818, as compared with 19,603 as of August 18, 1920, making the number of employees on the rolls at the present time approximately 65 per cent of the number 1 year ago.

The following tabulation shows the number of gold and silver employees, as of August 24, 1921, by departments, together with a comparison of the working force of the preceding month, and that of August, 1920:

Department or division.	Employees.		Total employees.		
	Gold.	Silver.	August, 1921.	July, 1921.	August, 1920.
Operation and Maintenance:					
Office.....	28	33	61	65	73
Electrical Division.....	176	182	358	369	504
Municipal Engineering.....	89	738	827	865	1,231
Lock Operation.....	178	551	729	738	746
Dredging Division.....	160	743	903	902	1,330
Mechanical Division.....	605	1,067	1,672	1,708	2,771
Marine Division.....	167	448	615	718	669
Fortifications.....	52	209	261	348	435
Totals.....	1,455	3,971	5,426	5,713	7,759
Supply Department:					
Quartermaster.....	202	1,275	1,477	1,647	3,566
Subsistence.....	28	261	289	307	433
Commissary.....	214	1,104	1,318	1,401	1,923
Cattle Industry, Plantations.....	16	130	146	159	497
Hotel Washington.....	10	89	99	97	102
Totals.....	470	2,859	3,329	3,611	6,521
Accounting Department.....	207	7	214	216	262
Health Department.....	245	724	969	1,093	1,085
Executive.....	531	227	758	779	789
Totals.....	983	958	1,941	2,088	2,136

Department or division.	Employees.		Total employees.		
	Gold.	Silver.	August, 1921.	July, 1921.	August, 1920.
Panama Railroad:					
Superintendent.....	64	335	399	409	644
Transportation.....	93	116	209	214	341
Receiving and Forwarding Agency.....	69	772	841	962	1,237
Coaling stations.....	105	568	673	686	965
Totals.....	331	1,791	2,122	2,271	3,187
Grand totals, August, 1921.....	3,239	9,579	12,818		
Grand totals, July, 1921.....	3,349	10,334		13,683	
Grand totals, August, 1920.....	4,569	15,034			19,603

VITAL STATISTICS.

A total of 184 deaths occurred during the month of August, 1921, among the population of the Canal Zone and the cities of Panama and Colon, equivalent to an annual death rate of 17.73 per thousand. The 3 leading causes of death were tuberculosis, diarrhea and enteritis, and pneumonia. Among other causes of death listed were 4 from dysentery, 2 each from malaria, influenza, and diphtheria, 1 from measles, and 8 from external causes. Of the above deaths, 82, or 44 per cent, occurred among children under 5 years of age.

There were 12 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

Three hundred and forty-eight live births were reported during the month, and 20 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 35.46 per thousand population. Deaths among children under 1 year of age numbered 51, giving an infant mortality rate, based on the number of births reported for the month, of 146.55 per thousand.

One hundred and sixteen cases of malaria were reported during the month, divided as follows: Employees, 21; nonemployees, 73; soldiers, 22. The origin of these malarial cases was as follows: Panama City, 5; Colon, 2; Canal Zone, 84; elsewhere, 25.

Three cases of typhoid fever were reported: 2 from Colon, and 1 from Panama. Two cases of smallpox were reported, 1 from Colon, and 1 nonresident.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, as compared with the preceding month, and the corresponding month of last year, were as follows:

	August, 1921.	July, 1921.	August, 1920.
Material received on U. S. requisitions during the month, chargeable as follows:			
Operation and Maintenance.....	\$231,470.63	\$233,899.82	\$807,357.87
Construction and equipment.....		286.40	34,216.92
Miscellaneous departments.....	17,068.84	9,434.67	21,706.60
Totals.....	248,539.47	243,618.89	863,281.39
Cash sales on the Isthmus:			
Stock.....	\$26,170.91	\$36,324.40	\$43,752.62
Fuel oil (including sales to steamships).....	1,947.40	993.60	138,649.85
Scrap.....	1,270.07	728.95	5,757.18
Obsolete and second-hand material.....	5,432.93	3,040.20	4,600.40
Totals.....	34,821.31	41,087.15	192,760.05
Sales to steamships from storehouses:			
Miscellaneous stock items.....	9,136.56	17,594.80	13,246.29
Fuel oil.....	1,207.40	993.60	38,309.45
Totals.....	10,343.96	18,588.40	51,555.74

Respectfully,

M. L. WALKER,
Acting Governor.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, August, 1921.*

From—	NORTH AMERICA.										EUROPE.										Grand total.	Per cent of total cargo.
	UNITED STATES.					WEST INDIES.					EUROPE.											
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	East coast of Canada.	East coast of Mexico.	Total, North America.	British Isles.	Denmark.	France.	Germany.	Holland.	Italy.	Belgium.	Europe. ²	Norway.	Total, Europe.	East coast of South America.		
SOUTH AMERICA:																						
Chile	17,509	12,842	12,481	42,913	8	1,886			42,921	7,090		755	5,206	400		102	10,546		24,099	674		
Colombia	382			382		1,486			2,468	185			850						1,035			
Peru	487			487		4,753			4,860	8,876									8,876			
West coast of South America	3,288			3,288		718			4,006	9,813				1,500					11,313			
Total, South America	22,052	12,842	12,481	47,375	8	8,824			56,207	25,964		755	6,056	1,900		102	10,546		45,323	674		
NORTH AMERICA:																						
West coast of United States	89,752	880	4,784	95,416	3,961	619			102,838	124,166	2,762		6,066	5,976	10,034	4,374	37,228	70	100,676	50		
West coast of Canada	2,630	330		3,000		1,705			4,705	55			163	55					273			
West coast of Central America	189	18		198		3,636			3,834	432			31					438	951			
Total, North America	92,582	1,248	4,784	98,614	3,961	4,255	1,705	2,842	111,377	124,221	3,244		6,260	6,031	10,034	4,374	37,228	508	191,900	50		
ASIA:																						
China	4,253			4,253					4,253											4,253		
Japan	659			659					659											659		
Philippines	15,905			15,905					15,905											15,905		
Far East	8,073			8,073		328			8,401											8,401		
Total, Asia	28,980			28,980		328			29,308											29,308		
AUSTRALASIA:																						
Australia	49			49					49	2,950									2,950			
New Zealand	288			288					288	39,827									39,827			
Australasia	1,248			1,248					1,248	12,100									12,100			
Total, Australasia	1,585			1,585					1,585	54,877									54,877			
Hawaii	29,700			29,700					29,700	302									302			
East coast, South America																						
Grand totals	174,809	14,000	17,295	206,254	3,969	13,407	1,705	2,842	228,177	205,364	3,244	755	12,316	7,931	10,034	4,476	47,774	508	292,402	724		
Per cent of total cargo, August, 1921	33.6	2.7	3.3	39.6	0.8	2.6	0.3	0.5	43.8	39.4	0.6	0.1	2.4	1.5	2.0	0.9	9.1	0.1	56.1	0.1		
Per cent of total cargo, July, 1921	29.0	2.8	4.7	36.5	0.8	2.5	0.7		40.5	36.7	1.7	0.7	71.7	3.5	2.2		11.4		59.4	0.1		

* Figures represent tons of 2,240 pounds.

* General cargo not routed so as to allow re-shipment between Atlantic ports.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, August, 1921.*

From—	SOUTH AMERICA.					NORTH AMERICA.					ASIA.					AUSTRALASIA.								
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. ¹	Total, South America.	West coast of United States.	Canada.	West coast of Central America.	Balboa, C. Z.	Total, North America.	China.	Japan.	Philippines.	Far East. ²	Total, Asia.	Australia.	New Zealand.	Australasia.	Total, Australasia.	Hawaii.	Grand totals.	Per cent of total cargo.	
NORTH AMERICA:																								
North Atlantic ports.....	2,727	372	230	563	6,250	10,142	45,731	2	333	46,065	9,313	20,306	4,153	32,675	66,447					11,059	11,059	890	134,595	42.3
South Atlantic ports.....	1,503				3,694	5,197	2,030		9,181	11,211	3,657	4,237	5,594	13,488								29,896	9.4	
Gulf ports.....	1,164		130	35		1,329	6,416		9,600	16,016	6,714	17,988	11,163	35,865	20,100					30,100	30,100		73,310	23.1
Total, United States.....	5,394	372	360	598	9,944	16,668	54,177	2	19,114	73,293	19,684	42,531	4,153	49,432	115,890	20,100				11,059	31,150	890	237,891	74.8
East coast of Mexico.....	7,718				10,000	17,718			9,000	9,000													26,718	8.1
Caribbean Canal Zone.....	87	415	74	173	2,963	3,712	1,794		2,922														6,134	2.4
West Indies.....					7,000				7,080														1,000	2.2
Total, North America.....	13,199	787	434	771	22,907	38,098	55,971	7,002	1,128	28,114	22,215	9,684	42,531	4,153	49,432	115,889	20,100			11,059	31,150	890	278,153	87.5
EUROPE:																								
Belgium.....	1,310			267	2,742	4,512	2,405	757															1,577	0.5
British Isles.....	552			1,218	1,245	1,245			3,162										8,351	7,915	16,266		23,949	7.5
Denmark.....					1,245	1,245																	1,245	0.4
France.....			119	29	374	522			66														322	0.2
Germany.....	2,840		25	33	2,341	5,239	66																5,305	1.6
Norway.....	280				2,341	2,621																	289	0.1
Europe.....					4,243	4,243	600		600														4,843	1.5
Total, Europe.....	4,982		144	1,547	10,945	17,618	3,071	757	3,828										8,351	7,915	16,266		37,712	11.8
East coast of South America.....		706				706																	2,105	0.7
Grand totals.....	18,181	1,493	578	2,318	33,852	56,422	59,812	7,759	1,128	28,114	96,813	19,684	43,160	4,153	49,432	116,429	20,100	8,351	18,965	47,416	890	317,570	100.0	
Per cent of total cargo, August, 1921.....	5.7	0.5	0.2	0.7	10.6	17.7	18.8	2.4	0.4	8.8	30.4	6.2	13.6	1.3	15.6	36.7	6.3	2.6	6.0	14.9	0.3	100.0		
Per cent of total cargo, July, 1921.....	7.2	0.3	0.1	1.7	5.3	14.6	35.6	1.0	3.2	0.4	40.5	3.3	11.3	.....	12.8	27.4	2.4	9.8	3.1	15.3	2.2			

* Figures represent tons of 2,240 pounds.

* General cargo not routed so as to allow segregation between definite ports.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, September 24, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Salt water draft.		From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.				Beam.	Draft.			Nature.	Tons.	Gross.	Net.
Santa Rosalia	17	16.58	18	6.20	18	15	18	15.30	American.	Ishtman Steamship Line.	405.0	52.0	25.0	New York	Kobe.	General	7,523	5,862	4,444
Speebacks	16	9.10	18	6.21	18	13.55	18	15.30	American.	A. Y. Goven.	480.0	17.0	6.0	Tampico	Tahiti.	Ballast	99	50	50
San Zeferino	17	7.30	18	7.45	18	13.53	18	16.30	British.	Eagle Oil Transp. Co.	420.0	54.0	26.8	Liverpool	Valparaiso.	Fuel oil	7,889	6,636	4,408
Peaywarth	18	12.18	19	6.30	19	14.31	19	17.30	British.	R. S. Danish.	410.0	53.0	17.0	Galveston.	Puget Sound.	Ballast	6,179	4,387	3,877
Knoxville City	19	2.45	19	7.27	19	13.55	19	17.19	American.	United States Steel Products Co.	425.0	58.0	26.0	Cristobal	Kobe.	General	7,761	7,539	5,448
O-11	19	1.30	19	7.30	19	15.49	19	17.30	American.	United States Navy	425.0	58.0	26.0	Cristobal	Balboa.	General	7,761	7,539	5,448
O-13	19	1.30	19	7.30	19	15.49	19	17.30	American.	United States Navy	425.0	58.0	26.0	Cristobal	Balboa.	General	7,761	7,539	5,448
O-14	19	1.30	19	7.30	19	15.49	19	17.30	American.	United States Navy	425.0	58.0	26.0	Cristobal	Balboa.	General	7,761	7,539	5,448
Quilera	18	2.55	20	6.15	20	14.06	20	17.10	British.	Pacific Steam Navigation Co.	361.0	46.0	13.7	New York	Guayaquil.	General	168	4,742	3,023
Asvaxan	19	17.25	20	7.35	20	15.12	20	18.07	British.	Alfred Holt & Co.	392.0	49.0	20.6	New Castle.	San Francisco	General	4,032	5,165	3,211
Plan Branch.	19	17.18	20	8.39	20	15.59	20	17.10	British.	F. and W. Ritson	398.0	54.0	19.0	New Castle.	Coronel.	General	2,240	5,761	3,881
Freepport Sulphur No. 5.	20	8.12	20	10.55	20	18.20	20	23.50	American.	Freepport Sulphur Transp. Co.	355.0	52.0	23.6	Texas City	San Francisco	Sulphur	5,750	4,940	3,316
Aysen	16	16.15	21	6.11	21	14.05	21	15.10	Chilean.	Chilean Steamship Line.	379.0	44.0	20.8	Cristobal	Valparaiso.	General	564	4,585	3,068
Santa Teresa.	20	16.46	21	6.15	21	14.34	21	17.10	American.	W. R. Grace & Co.	360.0	51.0	20.8	New York	Valparaiso.	General	1,438	5,726	4,036
Paris City	20	15.15	21	7.40	21	15.05	21	16.15	British.	St. Just Steamship Co.	419.0	55.0	13.0	Texas City	Sydney	Ballast	5,556	6,673	4,764
Kinkasan Maru	20	22.15	21	8.05	21	16.10	21	17.20	Japanese.	Mitsui & Co.	380.0	53.0	23.0	New York	Yokohama.	General	5,556	5,520	3,570
Terrier	21	6.00	21	8.45	21	16.36	21	17.33	Norwegian.	W. Wilhelmsen.	400.0	52.0	15.0	Port of Spain	Portland.	Ballast	5,556	5,520	3,570
Munires	21	7.17	21	9.22	21	17.28	21	18.31	American.	Munson Steamship Line.	370.0	53.0	16.0	Galveston.	Port of Spain.	Crude sulphur.	1,750	5,577	4,225
Florida	21	9.20	21	10.20	21	18.10	21	19.06	American.	American-Hawaiian Line.	415.0	54.0	23.0	New York	Los Angeles.	General	2,503	7,273	5,105
Balboa	19	16.48	21	11.00	21	19.08	21	19.54	American.	Colombian Maritime Co.	190.0	29.0	11.0	Cristobal	Buenaventura.	Ballast	350	741	741
North American	21	6.00	21	12.30	21	20.10	21	21.27	British.	North American Steamship Co.	280.0	45.0	20.1	New York	Malabridge.	Coal and general	3,090	2,444	1,571
Anna E.	21	6.00	21	12.30	21	20.10	21	21.27	American.	C. A. Blair	304.0	39.0	21.7	Cristobal	Gatun Lake.	General	1,750	3,030	2,021
Iris	21	13.45	22	6.00	22	14.10	22	15.25	American.	Pacific Transport Co.	330.0	48.0	19.0	Hamburg	San Francisco	General	2,500	4,094	2,924
Thien	21	15.25	22	6.14	22	14.15	22	15.30	German.	Kosmos Line.	330.0	48.0	19.0	Hamburg	Corral.	General	2,500	4,094	2,924
E. J. Luckenbach	21	15.24	22	7.13	22	15.27	22	16.29	American.	Luckenbach Line.	446.0	56.0	24.7	New York	San Francisco	General	2,800	8,508	6,179
Saeta	21	15.24	22	7.42	22	15.28	22	16.29	American.	United States Navy	424.0	56.0	26.0	Cristobal	Balboa.	General	2,800	8,508	6,179
Fairfield City	21	22.30	22	8.40	22	16.27	22	18.05	American.	United States Steel Products Co.	424.0	56.0	26.0	Cristobal	Taku Bar.	Steel rails	7,685	7,539	5,448
Kifuku Maru.	23	12.43	23	7.05	23	13.58	23	15.10	Japanese.	Kawasaki Kisen K. Kaisha	385.0	51.0	17.0	Norfolk.	Portland, Ore.	Ballast	5,919	4,389	3,889
Cash Roman.	23	7.55	23	8.20	23	15.32	23	20.24	American.	Atl. Gulf & Pac. S. S. Co. (S. B.)	275.0	52.0	22.0	Mobile.	Los Angeles.	General	2,399	5,142	3,568
Asphelles	23	6.24	23	12.30	23	18.57	23	20.24	American.	United States Navy	295.0	49.0	14.5	Port of Spain	Balboa.	General	3,856	5,660	4,174
Rotarian	23	13.26	24	7.05	24	14.07	24	15.30	American.	Pacific Argentine-Brazil Line.	339.0	53.0	23.8	Buenos Aires.	San Francisco	General	3,856	5,660	4,174
Egypt Maru	23	20.37	24	7.05	24	15.09	24	16.40	Japanese.	Kokusan Kisen Kaisha	400.0	53.0	18.0	London	Wellington.	Ballast	5,800	10,631	7,006
Tainui	23	20.37	24	8.55	24	18.11	24	23.30	British.	Shaw, Saville & Albion Co.	477.0	61.0	27.0	London	Wellington.	General	5,800	10,631	7,006
City of Glasgow	23	11.38	24	11.40	24	19.55	24	20.55	British.	Ellerman & Bucknall	391.0	54.0	25.6	New York	Yokohama.	General	5,734	6,102	4,365
Adna.	22	17.19	24	12.44	24	19.51	24	20.47	British.	Anglo-Saxon Petroleum Co.	400.5	52.3	27.0	Curacao.	San Francisco	Ballast	6,102	4,365	3,881

* Yacht.

* Submarine.

* Launch.

* Tug, towing barge No. 469.

* Gunboat.

THE PANAMA CANAL RECORD

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	9	14	33	18	6	47	18	14	37	18	19	25	American	Panama Railroad Steamship Line	514	0	65	0	27	1	Balboa	Norfolk	Ballast	11,519
Achilles ⁶	16	14	35	18	9	01	18	16	35	18	17	45	American	Standard Oil Co. of N. J.	419	4	57	2	24	0	San Francisco	Tampico	Ballast	7,345
Trontolite	18	12	05	18	13	52	18	20	50	18	20	50	American	N. Atl. and West. S. S. Co. (S. B.)	390	0	54	2	21	8	Seattle	New York	Lumber	4,505
Arugas	18	21	30	19	7	42	19	15	30	19	22	40	American	Williams-Dimond Co. (S. B.)	410	5	54	0	26	0	Portland	London	Lumber	7,000
West Camak	19	0	01	19	8	35	19	16	25	19	16	25	Japanese	Kawasaki Co.	385	0	51	0	26	2	Portland	United King	Wheat	6,022
Atlantic Maru	19	4	30	19	9	31	19	16	48	21	11	00	American	Colombian Maritime Co.	190	0	29	1	15	3	Buenaventura	Cristobal	Coffee	7,187
Balboa	19	6	20	19	9	53	19	17	53	20	10	05	British	Pacific Steam Navigation Co.	490	3	57	8	23	0	Valparaiso	New York	General	6,251
Enbrosan	19	5	00	19	11	16	19	19	50	19	21	55	Japanese	Mitsui Co.	380	0	53	2	23	0	Portland	Dublin	Wheat	6,830
Manaru	19	8	00	19	12	01	19	20	45	19	20	45	Peruvian	Peruvian Line	267	3	46	0	19	0	Callao	Cristobal	General	5,560
Buckeye State	19	10	00	19	13	57	19	21	55	20	1	30	American	Matson Navigation Co. (S. P.)	517	0	72	2	29	6	Hilo	Baltimore	General	2,007
Saint Joseph	19	23	30	20	7	48	20	15	20	21	12	07	French	French Line	397	8	51	0	22	0	Valparaiso	Harve	Barley, general	4,038
Moerdijk	20	4	30	20	11	12	20	18	21	16	28	Dutch	Holland-American Line	472	8	61	0	26	6	San Francisco	Rotterdam	General	7,165	
Havana Maru	20	13	50	21	7	43	21	16	18	21	16	35	Japanese	Ooska Shosen Kaisha	407	2	50	8	21	0	Singapore	New York	General	9,979
West Haven	21	10	00	21	11	44	21	19	23	21	20	06	American	Atl. Gulf & Pac. S. S. Co. (S. B.)	409	6	54	1	26	0	Seattle	Baltimore	General	8,800
O-16 ⁷	6	14	56	21	8	52	21	16	04	21	16	04	American	United States Navy	175	0	16	4	0	0	Balboa	Cristobal	General	5,015
Myrmidon	22	6	30	22	7	34	22	15	25	22	16	45	British	Alfred Holt & Co.	391	5	49	2	25	4	Seattle	Liverpool	General	6,234
K. I. Luckenbach	22	7	30	22	8	53	22	16	40	22	23	12	American	Luckenbach Line	446	0	56	1	28	0	San Francisco	New York	Lumber, general	7,782
Nieto de Lar-rinaga	23	1	30	23	7	54	23	15	25	23	15	25	British	Larrinaga & Co., Ltd	439	8	56	0	25	5	San Francisco	United King	Barley	8,964
D. G. Schofield	23	2	00	23	8	45	23	16	40	23	16	40	American	Standard Oil Co.	439	5	58	0	30	7	San Francisco	Philadelphia	Lubricating oil	7,188
Galveston ⁸	23	17	12	24	6	38	24	15	24	24	15	24	American	United States Navy	308	1	44	5	17	9	Balboa	Key West	General	11,000
Salvador	23	17	10	24	6	45	24	14	08	24	14	08	British	Pacific Steam Navigation Co.	215	0	33	5	15	0	Guayaquil	Cristobal	General	908
Victoria	24	5	00	24	8	35	24	16	23	24	19	05	British	Pacific Steam Navigation Co.	401	4	52	3	21	0	Valparaiso	Liverpool	General	1,213
Westward Ho	23	17	20	24	9	10	24	17	03	25	11	15	American	Thornbyke & Trenholme (S. B.)	410	0	54	2	24	0	Tacoma	Antwerp	General	2,396
Chancellor	24	7	30	24	9	32	24	17	55	24	20	05	British	T. and J. Harrison	385	0	52	0	23	0	San Francisco	London	General	6,895
																							6,310	
																							5,370	
																							3,789	

⁶ Collier.⁷ Cruiser.⁸ Barley, flour, and general.⁹ Sugar, pineapples, and general.¹⁰ Copper, flour, lumber, and general.¹¹ Coffee, cocoa, ivory nuts, etc.¹² Barley, wheat, and flour.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	To—
Sept. 18	Atenas	United Fruit Co.	New Orleans.	Sept. 18	Perou	French Line	Havre.
Sept. 19	Carthago	United Fruit Co.	New Orleans.	Sept. 18	Atenas	United Fruit Co.	Bocas del Toro.
Sept. 19	Venezuela	Royal Netherlands W. I. Mail	Cartagena and Amsterdam.	Sept. 18	Clapet No. 7	Abello Guas	Habana.
				Sept. 20	Venezuela	Royal Netherlands W. I. Mail	Port Limon.
Sept. 20	Calamares	United Fruit Co.	New York.	Sept. 21	Atenas	United Fruit Co.	New Orleans.
Sept. 20	Caribbean	Panama Railroad	Cattle Industry.	Sept. 21	Calamares	United Fruit Co.	New York via Port Limon.
Sept. 21	Atenas	United Fruit Co.	Bocas del Toro.	Sept. 21	Turriaba	United Fruit Co.	New York via Kingston.
Sept. 21	Trivives	United Fruit Co.	New York via Kingston.	Sept. 22	Trivives	United Fruit Co.	New York via Colombian ports.
Sept. 22	Venezuela	Royal Netherlands W. I. Mail	Port Limon.				

(Continued on page 120, column 2.)

Tonnage Passing Through the Canal Compared with that Entering and Clearing United States Ports in Foreign Trade.

A comparison of the tonnage passing through the Panama Canal with that entering and clearing at various ports or customs districts of the United States in the foreign trade is available from figures published in an article "Shipping Activities in United States Ports," in *Commerce Reports* of September 5.

It should be borne in mind in making comparisons and visualizing the activities of the ports that the figures for the United States are for foreign trade only, and do not include the extensive coastwise traffic, while those for the Canal include all vessels.

The article says in part:

The total net tonnage of vessels entering United States ports in 1920 was 50,139,844, and the total net tonnage of clearances was 53,037,390. Of the total entrances 25,509,538 tons represented American vessels, and of clearances the amount representing American tonnage was 26,425,464.

For the Atlantic coast, exclusive of Florida, entrances totaled about 32,800,000 and clearances about 33,400,000 tons, with New York accounting for the major part. For the Pacific coast, entrances totaled about 5,300,000 and clearances about 6,000,000 tons. The balance is credited to Gulf districts and Florida. The following shows the rank of customs districts in vessel tonnage entered and cleared:

Entrances.	Net tons.	Clearances.	Net tons.
New York.....	17,404,000	New York.....	15,045,000
New Orleans.....	4,577,000	Virginia.....	6,658,000
Virginia.....	3,724,000	New Orleans.....	4,928,000
Philadelphia.....	3,518,000	Maryland.....	4,544,000
Maryland.....	3,510,000	Philadelphia.....	3,806,000
Washington.....	3,346,000	Washington.....	3,442,000
Galveston.....	2,426,000	Galveston.....	2,838,000
Florida.....	2,420,000	Sabine.....	2,317,000
Massachusetts.....	2,249,000	Florida.....	2,269,000
Sabine.....	1,923,000	San Francisco.....	1,601,000
San Francisco.....	1,387,000	Massachusetts.....	1,337,000
Maine and New Hampshire.....	693,000	Mobile.....	912,000
Mobile.....	627,000	Maine and New Hampshire.....	721,000
Georgia.....	609,000	Georgia.....	698,000
South Carolina.....	578,000	Los Angeles.....	554,000
Rhode Island.....	373,000	Oregon.....	462,000
Los Angeles.....	307,000	South Carolina.....	410,000
Oregon.....	201,000	Rhode Island.....	365,000
North Carolina.....	172,000	North Carolina.....	42,000
San Antonio.....	45,000	San Antonio.....	38,000
Connecticut.....	25,000	San Diego.....	26,000
San Diego.....	14,000	Connecticut.....	13,000

The difference between the two sets of figures for any district is due to the practice of vessels entering at one port and moving to another to secure cargo before clearing for a foreign destination. There are a number of striking illustrations of this practice, as in the case of Oregon showing for clearances more than twice the tonnage entered, and Connecticut showing entrances nearly twice as large as clearances. On the other hand, a very close approach to balance of movement is shown by the figures for Washington and for Rhode Island.

During the year 1920 the aggregate registered net tonnage of the 2,814 commercial vessels passing through the Panama Canal was 8,458,401 tons. This was greater than the entrances or clearances at any of the United States ports or districts with the exception of New York. It was approximately half as great as the foreign trade traffic in New York, and about one-sixth of the entrances or clearances in all the foreign trade of the United States.

Omitting the United States coastwise trade from the Canal total, there were approximately 7,660,000 net tons in other trade, passing through the Canal in 1920. This is more than the foreign trade traffic in any of the United States ports except New York.

Cash Balance in Appropriations, August, 1921.

BALBOA HEIGHTS, C. Z., September 24, 1921.

*The Honorable, the Secretary of War,**Washington, D. C.*

SIR: Herewith is a report showing the commissary sales, financial receipts and expenditures, and of the cash balance available in the Panama Canal appropriations for the month of August, 1921, as compared with the preceding month, and with the corresponding month of last year:

	August, 1921.	July, 1921.	August, 1920.
Cash balance available for expenditure:			
In Canal appropriations.....	\$13,754,717.93	\$15,389,317.00	\$19,050,868.15
Payments made from appropriations:			
By Paymaster on the Isthmus.....	1,139,592.07	1,272,050.24	1,663,441.16
By Disbursing Clerk, Washington, D. C.....	334,921.39	155,303.14	983,980.75
To the Panama Railroad Company (for commissary books).....	224,170.75	238,914.68	373,836.31
Collections on Isthmus:			
Repaid to appropriations.....	807,211.41	690,202.83	895,711.43
Commissary and other trust funds.....	225,572.23	241,270.03	375,235.39
Tolls.....	955,404.98	804,523.91	929,574.44
Sales of water.....	2,240.65	20,517.30	4,932.35
Postal receipts.....	8,818.81	9,212.79	8,894.19
Licenses, taxes, court fees, fines, etc.....	3,250.24	3,884.30	4,198.17
Sale of obsolete material.....	100.00		18,516.88
Total collections on Isthmus.....	2,002,598.32	1,769,611.16	2,237,062.85
Collections by Disbursing Clerk, at Washington.....	2,133.07	894.56	194,988.63
Deposits with Assistant Treasurer, United States.....	68,000.00	61,500.00	175,910.00
Canal Zone and miscellaneous funds:			
Receipts—			
Money order funds.....	100,961.93	112,295.01	145,664.34
Clubhouse funds.....	35,698.27	36,428.49	31,269.98
Interest.....	1,505.79	3,100.80	949.43
Trust funds.....	401.50	2,295.68	339.00
Total receipts.....	138,567.49	154,119.98	178,222.75
Disbursements—			
Money order funds.....	195,525.14	102,300.00	183,700.00
Clubhouse funds.....	33,219.65	38,985.77	34,676.10
Interest.....	1,024.84	1,117.77	686.51
Trust funds.....	1,351.47	1,712.87	
Total disbursements.....	231,121.10	144,116.41	219,062.61
Pay roll on the Isthmus:			
Maintenance and operation.....	812,342.32	834,414.82	1,225,345.30
Sanitation.....	81,301.70	81,864.02	81,395.09
Civil Government.....	51,695.94	52,043.89	52,535.39
Construction and equipment.....			41.67
Total.....	945,339.96	968,322.73	1,359,317.45
Requisitions for purchases in the United States.....	42,794.44	69,919.63	1,947,226.44
Sales of commissary supplies:			
To The Panama Canal.....	100,250.39	107,409.37	138,916.37
To steamships, other than those of the United States Government and Panama Railroad Steamship Line.....	30,960.06	41,045.29	98,874.94
To the Panama Railroad, including its steamships, and the Hotel Washington.....	19,356.96	16,256.97	32,138.97
To the United States Government, including the Army and Navy.....	178,585.33	136,086.07	106,806.51
To individuals and companies through charge accounts.....	21,835.81	25,632.07	34,307.22
To individuals purchasing coupons.....	370,094.79	390,604.33	593,430.35
Total.....	721,083.34	717,034.10	1,004,474.36

¹ Balance on last day of month.

Respectfully,

M. L. WALKER,

Acting Governor.

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Cristobal for Week Ending September 24, 1921.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Jamaica.....	Pacific Steam Navigation Co.....	September 17.	September 17.		33
Aysen.....	Compañia Sudamericana Vapores.....	September 21.	September 21.		567
Cristobal.....	Panama Railroad Steamship Line.....	September 22.	September 22.		
Colon.....	Panama Railroad Steamship Line.....	September 23.	September 23.		2,808
Quillota.....	Pacific Steam Navigation Co.....	September 17.	September 17.	8	
Acajutla.....	Pacific Steam Navigation Co.....	September 17.	September 17.	283	
Quilpué.....	Pacific Steam Navigation Co.....	September 18.	September 20.	11	14
Mantaro.....	Peruvian Steamship Line.....	September 19.	September 19.	2,007	
Venezuela.....	Royal Dutch West India Mail.....	September 19.	September 23.	85	1,585
Cartago.....	United Fruit Co.....	September 19.	September 22.	844	285
Balboa.....	Colombian Maritime Co.....	September 19.	September 21.	587	
Caribbean.....	Panama Railroad Cattle Industry.....	September 20.	September 22.	400	1
Calamares.....	United Fruit Co.....	September 20.	September 21.	240	250
Tivives.....	United Fruit Co.....	September 21.	September 22.	59	140
Atenas.....	United Fruit Co.....	September 21.	September 21.	25	6
Turrialba.....	United Fruit Co.....	September 22.	September 22.	36	1
Adna.....	Anglo-Saxon Petroleum Co.....	September 22.	September 22.	7,110	
San Pablo.....	United Fruit Co.....	September 24.	September 24.	29	
Bologna.....	Italian Steamship Line.....	September 24.	September 24.	101	
Solana.....	Pacific Mail Steamship Co.....	September 24.	September 24.	10,000	

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Balboa for Week Ending September 24, 1921.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Quilpué.....	Pacific Steam Navigation Co.....	September 20.	September 20.		15
Havana Maru.....	Osaka Shosen Kaisha.....	September 20.	September 21.	1	
Choyo Maru.....	Toyo Kisen Kaisha.....	September 24.	September 24.	802	

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended September 24:

U. S. submarines *O-11*, dock, stage, clean, and paint; grind-in sea valves; renew zincs; perform minor structural repairs on hull; repair hydroplanes; install starboard torpedo tube shutter; install mast for submerged radio antennæ; renew portion of superstructure deck plating frames; manufacture and install bracket for anchor shafting; grind-in all engineering sea valves; *O-13*, dock, stage, clean, and paint; grind-in all C. and R. sea and stop valves; repair or renew underwater fittings; renew gaskets on torpedo room air induction valve; renew piping on lower torpedo tube and forward trim tank gauges; remove superstructure flood valves and repack stuffing boxes; galvanize all battery deck cover battens; manufacture and install 3 dogs for battery deck cover battens; repair all hydroplanes; renew leaky rivets on starboard side of water line; repair anchor gear; calibrate gauges; grind-in engineering sea valves; *O-14*, dock, stage, clean, and paint; overhaul C. and R. sea and stop valves; renew zincs as necessary; renew section of superstructure side plating; renew plate on master vent in fairwater; overhaul suction, vents, and kingston ballast valves; renew gaskets on battery ventilation valves; repack stuffing boxes on horizontal and vertical steering gear shafts; repair radio system; overhaul engineering sea and stop valves; repair stern tube; cruiser *Libia*, renew broken branch copper exhaust line, main feed pump; repair leak in flange, exhaust line, anchor engine; cut 4 openings in coal bunker; steamships *Trontolite*, repairs to circulating pump and engine; *Chifuku Maru*, repairs to main engine; *Donald McKay*, repairs to main feed pump; repair inboard and port fan engine; rebrick boilers; yacht *Speejacks*, splice wire for insulators in shrouds; tugs *Gatun*, dock, stage, clean, and paint bottom; *Coco Solo*, install two 80-gallon galvanized iron tanks; install galley pump in after starboard corner of cabin; barges *No. 101*, dock, stage, clean, scale bottom and paint bottom to light load line; *No. 146*, dock, stage, clean, scale bottom and paint

bottom to light load line; *No. 195*, dock, stage, clean, scale bottom and paint bottom to light load line.

PREVIOUSLY REPORTED.

U. S. submarines *O-15*, dock, stage, clean and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; *O-16*, dock, stage, clean and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; steamship *Panama*, reboiling and general overhaul to machinery and hull; launch *Pacific*, general repairs to hull.

The following vessels were at the Cristobal shops for repairs during the week ended September 26:

Tug *Engineer*, make foundation plate with cushion; assemble engine and generator and install; renew 1 floor plate in fireroom; calk end of butt strap aft end of boiler; furnish and install one 2-inch steam valve to injector; furnish, fit, and install 1 section of pipe for syphon in after hold; steamship *Solana*, renew 2 ice machine cans; supply 4 wind chutes for dynamo; U. S. S. *287*, dock and undock; clean and paint bottom; examine and renew where necessary screens on underwater suction; overhaul all C. and R. sea valves; repack rudder glands; repair shoe; renew zincs on hull; renew nipple for auxiliary circulating intake; pack stern glands; straighten 1 propeller blade; renew bushings on strut bearings; U. S. D. B. *L-53*, manufacture, fit, and install 1 pinion for deck winch, forward; manufacture, fit, and install 1 reverse gear clutch arm as sample; examine winch and put same in working order, etc.; steamships *Munaires*, *Balboa*, *West Haven*, *Acajulla*, *Tainui*, *Mantaro*, and *Venezuela*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *Eagle No. 31*, overhaul sea valves and zincs; motor schooner *Satoe*, general overhauling, including dry-docking; steamship *Toedjoe*, install bulwarks; alter crew accommodations; U. S. S. *P. 1841*, dock and undock; fit up for towing to the United States; U. S. S. *Patuxent*, repair 8 KW reciprocating dynamo; U. S. S. *Caesar*, manufacture and install new liners, etc.; steamships *Colon*, miscellaneous engine department repairs; *Cristobal*, miscellaneous engine and deck department repairs.

Lowered Rates to New York on Certain Articles Produced in Panama.

The Panama Railroad Steamship Line has reduced rates, effective September 20, on a number of items of produce of Panama, for shipment from Colon or Cristobal to New York. The new rates are as follows:

Article.	Rate. (In U. S. currency.)
	<i>Per 100 lbs.</i>
Animals and birds, alive, in crates or boxes: ¹	
Monkeys, parakeets, parrots, and macaws.....	\$1.00
Turtles.....	1.95
Cocoas.....	.50
Coconuts ².....	.30
Bananas without refrigeration ³.....	.35
Ivory nuts ³.....	.30
Iron and steel scrap, K. D., including old rails and car wheels. ³ (Can be accepted only in limited quantities by previous agreement with Superintendent's office on the Isthmus). No piece or package over 4,000 pounds.....	.30
Woods:	
Balsa ¹.....	.50
Cedar logs ¹.....	.40
Cocobolo wood ¹.....	.40
Dyewood, N. O. S. ².....	.95
Ebony ².....	.40
Fustic ².....	.40
Lignum-vitae ².....	.40
Mahogany ².....	.40
Palm sticks.....	.40

¹ Per cubic foot. ² Indicates a decrease in rate. ³ Freight charges to be adjusted at New York on measurements to be made by Constantine & Co., based on an allowance of Balsa, 33 pounds per cubic foot; cedar, 45 pounds per cubic foot; mahogany, 60 pounds per cubic foot.

Peruvian Shipping and the Panama Canal.¹

The following table shows the transits made by vessels under the Peruvian flag in either direction during each fiscal year since the Panama Canal was opened to navigation in August, 1914:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915.....	2	2	4
1916.....	16	14	30
1917.....	43	43	86
1918.....	41	42	83
1919.....	34	31	65
1920.....	37	38	75
1921.....	32	28	60
Totals.....	205	198	403

The number of transits credited to Peru in 1921 is less than in any previous year since 1916. This may be attributed to the economic conditions of the past year, which require no comment.

One vessel included in the statistics for 1921 was a sailing ship belonging to the Peruvian Government bound from Callao to London with 4,000 tons of guano, 1 was a small steamer owned by E. Leith, of Lima, carrying 125 tons of briquettes from Halifax to Callao, and 1 was a yacht in ballast from Belize to Callao. All the other vessels belonged to the Compañia Peruana de Vapores y Dique de Callao (Peruvian Line). This company had 25 sailings from Cristobal to Callao and other ports on the west coast of South America with 26,762 tons of cargo, and 26 sailings from the west coast to Cristobal with 57,146 tons of cargo.

The Peruvian Line also dispatches an occasional steamer to the United States or to the United Kingdom via Panama, calling on either route at the principal ports along the coast as cargo offers. During the fiscal year 1921 it had 2 vessels southbound through the Canal from the United Kingdom with 6,901 tons of cargo, 1 vessel northbound to the United Kingdom with 2,128 tons, and 2 vessels southbound from the United States with 8,260 tons. The Peruvian Line steamers carry passengers as well as freight.

The total cargo moving through the Canal in Peruvian bottoms in 1921 was: Southbound, 42,048 tons, and northbound, 63,274 tons.

¹ This is the eighth of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, Danish, Swedish, and Chilean shipping.

Deceased and Insane Employees.

The estates of the following deceased or insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

DECEASED.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Nathaniel Jackson	30755	Jamaica	Panama.....	Health Department....	September 18, 1921.
Eustace Prout.....	31299	Trinidad	Colon.....	Electrical Division....	September 15, 1921.

INSANE.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of commitment.
Alonzo Boyce	42627	Barbados	Gatun	Gatun Locks.....	September 19, 1921.

PANAMA RAILROAD PASSENGER TRAIN TIME-TABLE NO. 35, EFFECTIVE OCTOBER 1, 1921.

MAIN LINE STATIONS			DAILY.			MAIN LINE STATIONS			DAILY.		
			3	5	7				4	6	8
Leave			A. M.	A. M.	P. M.	Leave			A. M.	A. M.	P. M.
Colon.....	7.10	11.00	5.00	.....	.....	Panama.....	7.10	11.00	5.00	.....	5.00
Mount Hope.....	7.15	11.05	5.05	.....	.....	Balboa Heights.....	7.15	11.05	5.05	.....	5.05
Fort Davis.....	7.24	11.14	5.14	.....	.....	Corozal.....	7.21	11.12	5.10	.....	5.10
Gatun.....	7.29	11.19	5.19	.....	.....	Fort Clayton.....	7.25	11.16	5.14	.....	5.14
.....	.....	.....	.....	.....	.....	Miraflores Locks.....	7.28	11.19	5.17	.....	5.17
Monte Lirio.....	7.44	11.34	5.33	.....	.....	Red Tank.....	7.32	11.22	5.21	.....	5.21
.....	.....	.....	.....	.....	.....	Pedro Miguel.....	7.36	11.25	5.25	.....	5.25
Frijoles.....	7.55	11.45	5.44	.....	.....	Summit.....	7.48	11.37	5.37	.....	5.37
Darien.....	8.00	11.52	5.51	.....	.....	Gambao.....	8.00	11.49	5.49	.....	5.49
.....	8.16	12.04	6.04	.....	.....	Summit.....	8.09	11.59	5.59	.....	5.59
Gambao.....	8.32	12.16	6.16	.....	.....	Darien.....	8.17	12.07	6.07	.....	6.07
Summit.....	8.46	12.27	6.26	.....	.....	Frijoles.....	8.29	12.19	6.18	.....	6.18
Pedro Miguel.....	8.49	12.30	6.28	.....	.....	Monte Lirio.....	8.44	12.34	6.34	.....	6.34
Miraflores Locks.....	8.53	12.34	6.32	.....	.....	Gatun.....	8.48	12.38	6.38	.....	6.38
Fort Clayton.....	8.56	12.37	6.35	.....	.....	Fort Davis.....	8.55	12.45	6.45	.....	6.45
Corozal.....	9.00	12.41	6.40	.....	.....	Mount Hope.....	9.00	12.50	6.50	.....	6.50
Balboa Heights.....	9.05	12.50	6.45	.....	.....	Colon.....	9.00	12.50	6.50	.....	6.50
Panama.....	9.10	12.55	6.50	.....	.....	.....	.....	.....	.....	.....	.....
Arrive	A. M.	P. M.	P. M.	.....	.....	Arrive	A. M.	P. M.	P. M.	.....	P. M.
			3	5	7				4	6	8

All trains stop where time is shown.

DAILY.			DAILY			DAILY			DAILY			DAILY					
Daily except Sat. and Sunday.			Daily except Sat. and Sunday.			Daily except Sat. and Sunday.			Daily except Sat. and Sunday.			Daily except Sat. and Sunday.					
27	25	23	21	19	17	15	FORT RANDOLPH BRANCH STATIONS			16	18	20	22	24	26	28	
P.M.	P.M.	P.M.	P.M.	P.M.	A.M.	A.M.	Leave	Arrive			A.M.	A.M.	P.M.	P.M.	P.M.	P.M.	
11 00	7 30	5 30	3 30	1 00	11 00	6 58	Third Street, Colon	8 50	11 55	1 55	4 25	6 25	8 25	11 55	11 55	11 55	
11 02	7 32	5 32	3 32	1 02	11 02	7 00	Seventh Street	8 48	11 53	1 53	4 23	6 23	8 23	11 53	11 53	11 53	
11 04	7 34	5 34	3 34	1 04	11 04	7 02	Cristobal Commissary	8 46	11 51	1 51	4 21	6 21	8 21	11 51	11 51	11 51	
11 13	7 43	5 43	3 43	1 13	11 13	7 11	Tower "B"	8 35	11 40	1 40	4 18	6 10	8 10	11 40	11 40	11 40	
11 19	7 49	5 49	3 49	1 19	11 19	7 17	France Field	8 30	11 35	1 35	4 05	6 05	8 05	11 35	11 35	11 35	
11 25	7 55	5 55	3 55	1 25	11 25	7 30	Coco Solo Station	8 25	11 30	1 30	4 00	6 00	8 00	11 30	11 30	11 30	
P.M.	P.M.	P.M.	P.M.	P.M.	A.M.	A.M.	Fort Randolph	A.M.	A.M.	P.M.	P.M.	P.M.	P.M.	P.M.	P.M.	P.M.	
			21	19	17	15	Arrive	Leave			16	18	20	22	24	26	28
27	25	23	21	19	17	15											

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

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Volume XV.

Balboa Heights, C. Z., October 5, 1921.

No. 8.

Canal Traffic during September.

Commercial traffic through the Panama Canal during the month of September fell slightly below that of the preceding month, but was higher than during the months of May, June, and July. The following shows a summary of the commercial traffic through the Canal for the past 6 months:

1921.	No. of ships.	Panama Canal net tonnage.	Registered gross tonnage.	Tolls.	Tons of cargo.
April.....	227	955,503	1,203,087	\$927,977.09	907,613
May.....	210	864,617	1,092,602	835,832.77	792,735
June.....	192	761,477	960,857	751,964.12	694,720
July.....	206	810,613	1,022,802	804,503.11	708,982
August.....	236	965,276	1,219,817	955,380.78	839,273
September.....	221	925,137	1,167,220	892,001.54	754,894

Commercial vessels passing from the Atlantic to the Pacific numbered 128, and in point of tonnage not only exceeded the September traffic of last year, but with the exception of the months of December, 1920, and March, 1921, is the greatest Atlantic-Pacific traffic since the opening of the Canal. Analysis of this traffic shows that approximately 56 per cent of the total traffic from the Atlantic to the Pacific was routed to the west coast of the United States and Canada, as compared with an average of approximately 26 per cent during the past fiscal year, ending June 30, 1921. Many of these vessels were in ballast, and presumably will return through the Canal laden with grain.

The traffic to the west coast of South America, in point of tonnage, represented 17 per cent of the total traffic from the Atlantic to the Pacific, as compared with an average of approximately 34 per cent during the past fiscal year. The traffic from Europe and the east coast of the United States to Australasia represented approximately 10 per cent as against an average of 17 per cent during the past fiscal year. Traffic to the Far East was about normal, representing approximately 15 per cent of the total traffic from the Atlantic to the Pacific.

Traffic from the Pacific to the Atlantic, with the exception of June, 1921; was the lowest, in point of tonnage, since June, 1920, and was approximately but three-fourths that of September, 1920. Analyzing the movement of vessels from the Pacific to the Atlantic, it is found that in point of tonnage, 60 per cent of the total traffic originated on the west coast of the United States and Canada, as compared with an average of approximately 32 per cent during the past fiscal year. Traffic from the west coast of South America, however, represented but 20 per cent of the total traffic from the Pacific to the Atlantic, as against an average of approximately 40 per cent for the past fiscal year. The South American movement, both ways, was affected by

almost complete stoppage of oil shipments from Mexico, and continued stagnation in the nitrate trade.

Traffic from Australasia to Europe and the east coast of the United States represented approximately 10 per cent of the total tonnage as compared with an average of approximately 17 per cent during the past fiscal year. Traffic from the Far East also fell off somewhat, the September traffic representing approximately 4 per cent of the total, as against an average of approximately 6 per cent during the past fiscal year.

Supplement No. 2 to Tariff No. 5.—Diesel Oil.—Pumping Oil.—Special Train.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
BALBOA HEIGHTS, C. Z., September 20, 1921.

ITEM 22.—FUEL AND DIESEL OILS. (Effective October 1, 1921.)

2. Diesel oil, per barrel of 42 gallons, delivered to vessels at Cristobal¹. . . . \$3.60
(NOTE—Diesel oil may be obtained from private concerns at Balboa, at approximately \$3.50 per barrel.)
3. Pumping oil into and out of private tanks, 4 cents per barrel, each way, excepting, that between the hours of 11 p. m. and 7 a. m., an additional charge of \$4.70 per hour will be made for pumping cargoes from ships into storage tanks. A charge of 10 cents per barrel will be made for pumping oil from storage tanks into ships between these hours. Oil having a viscosity greater than 780 seconds at 86° F. (Saybolt Furol viscosimeter) will not be handled by The Panama Canal.

ITEM 35.—SPECIAL TRAIN. (Effective September 20, 1921.)

1. Special train, consisting of engine, baggage or buffer car, and 1 coach, seating not to exceed 60 passengers; minimum charge, deposited or guaranteed in advance, \$100. The rate for a 1-way train will be the same as for a round trip within 8 hours. If train does not return to starting point within 8 hours, an additional charge of \$50 will be made.

All passengers must be provided with tickets or other regular forms of transportation.

M. L. WALKER,
Acting Governor, The Panama Canal.
Second Vice President, Panama Railroad Company.

Supplement No. 3 to Tariff No. 5.—Storage on Piers.—Fuel and Diesel Oils

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
BALBOA HEIGHTS, C. Z., October 1, 1921.

ITEM 17.—STORAGE ON PIERS. (Effective October 1, 1921.)

1. Transit cargo, routed and unrouted:
For first 35 days after delivery on pier. Free

ITEM 22.—FUEL AND DIESEL OILS. (Effective October 1, 1921.)

1. Fuel oil, per barrel of 42 gallons, delivered to vessels at either Cristobal or Balboa. \$1.70
2. Diesel oil, per barrel of 42 gallons, delivered to vessels at Cristobal¹. 3.50

M. L. WALKER,
Acting Governor, The Panama Canal.
Second Vice President, Panama Railroad Company.

¹ NOTE.—The 'supplements above are published as signed and in the order of their issuance. It will be noted that the price of Diesel oil as established by Supplement No. 3, dated October 1, supersedes that under Supplement No. 2 of September 20.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended September 30:

Steamships *West Isleta*, dismantle broken parts on main engine; manufacture new bracket; rebore H. P. cylinder; manufacture new H. P. plug type bull ring; line up crosshead and guide; repair L. P. eccentric strap; manufacture new key for eccentric cam; *Rakuyo Maru*, manufacture 1 plunger rod for sanitary pump for port gear shaft; launch *Aloha*, turn piston rod to $\frac{5}{8}$ " diameter and manufacture 1 follower ring to fit retrued piston; steamships *Cape Ortegál*, manufacture new H. P. cylinder head, 1 follower ring, and 30 studs; *Westward Ho*, repairs to telemotor.

PREVIOUSLY REPORTED.

Tug *Gatun*, dock, stage, clean, and paint; fair dent in hull; calk leaky rivets and weld butt strap; perform miscellaneous light repairs; U. S. submarines *O-11*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; *O-13*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; *O-14*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; *O-15*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; steamship *Panama*, reboiling and general overhaul to machinery and hull; cruiser *Libia*, additional miscellaneous light repairs to water system, drainage system, and ladders; steamship *Donald McKay*, repairs to main feed pump; repair inboard and port fan engine; rebrick boilers; launch *Pacific*, general repairs to hull; steamship *Chifuku Maru*, repairs to main engine; barges *No. 101*, dock, stage, clean, scale, and paint; *No. 146*, dock, stage, clean, scale, and paint; *No. 195*, dock, stage, clean, scale, and paint.

The following vessels were at the Cristobal shops for repairs during the week ended October 3:

Steamships *Allianza*, rebuild bridge walls, forward port boiler, and fit dead plate port and starboard boiler aft; repair safety valve on after starboard boiler; *Caribbean*, repair sanitary and fresh water pipe in boiler rooms; make 8 valve studs for bilge pump and 24 bolts as sample; bark *Golden Gate*, dock and undock; repair steering gear and rudder; steamship *Heredia*, repair crosshead for C. O. 2nd machine and make new wrist pin for same; manufacture box wrench and get out plate for ventilator; barge *No. 21*, dock and undock; clean and paint hull; patch hull; burn off rudder bearing flush with stem; launch *Gargoyle*, install new controls, etc.; U. S. S. *Quincy*, manufacture and install new liner in ammonia compressor; steamships *General G. W. Goethals*, renew gaskets in 2 water-tight doors No. 2 hold and free dogs; renew casings on pipes and No. 2 hold; *Balboa*, *Hoosier State*, *Manavi*, *Salvador*, *St. Louis*, *Parismina*, tug *Tavernilla*, motor schooner *Laura C. Hall*, launches *Gold Star* and *Eunice*, minor repairs.

PREVIOUSLY REPORTED.

Tug *Engineer*, make foundation plate, etc.; U. S. S. *287*, dock and undock; clean and paint bottom; overhaul sea valves, etc.; U. S. S. *P. 1841*, dock and undock; fit up for towing to the United States; steamship *Toedjoe*, install bulwarks; alter crew accommodations; U. S. S. *Patuxent*, repair 8 K. W. reciprocating dynamo.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending October 1, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Rakuyo Maru.....	Toyo Kisen Kaisha.....	September 24.	September 26.	15	.....
Laura C. Hall.....	Pacific Metals Transp. Co., Ltd. .	September 25.	September 26.	3	.....
Venezuela.....	Pacific Mail Steamship Co.....	September 26.	September 26.	9	2
Spectator.....	T. and J. Harrison.....	September 27.	September 28.	.....	32
Salvador.....	Pacific Steam Navigation Co.....	September 28.	September 28.	.....	1
Jamaica.....	Pacific Steam Navigation Co.....	September 28.	September 28.	.....	37
Manavi.....	Pacific Steam Navigation Co.....	September 30.	September 30.	1	.....
Barima.....	Pacific Steam Navigation Co.....	September 30.	September 30.	1	.....

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, October 1, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Strilling.	24	13	26	25	6	30	25	13	25	American.	310.0	31	10.6	New York.	San Diego.	General.	7,680	7,285	5,256
Mobile City	24	22	53	25	6	45	25	14	25	British.	395.0	55	0	27	Baltimore.	Kobe.	8,236	8,236	6,256
Kumeric.	25	7	38	25	7	52	25	15	15	British.	460.0	55	0	16	New York.	Tocopilla.	4,418	4,418	3,382
Fotis.	25	7	51	25	9	00	25	16	25	Greek.	352.0	51	0	15	Barry.	Portland.	1,413	6,759	4,900
West Isleta	25	9	28	25	10	04	25	16	25	American.	410.0	54	0	20	Portland.	Los Angeles.	6,288	6,186	4,440
Hayo Maru.	25	9	44	25	11	00	25	19	12	Japanese.	400.0	53	0	25	New York.	Yokohama.	8,207	8,207	5,900
Kaikyo Maru.	25	13	41	26	6	36	26	14	20	Japanese.	445.0	58	0	17	Norfolk.	Astoria.	5,868	5,868	4,324
Clyde Maru.	25	14	06	26	7	13	26	16	11	Japanese.	380.0	53	0	18	Norfolk.	Puget Sound.	2,100	6,093	4,353
Venezuela.	25	12	06	26	9	09	26	16	20	American.	400.0	49	0	21	Baltimore.	San Francisco.	4,200	4,200	3,371
Kennebec.	25	17	15	26	9	20	26	16	25	American.	360.0	50	0	19	New York.	Los Angeles.	7,479	7,479	4,750
Mollere.	25	30	24	26	10	30	26	17	50	British.	440.0	56	0	20	Antwerp.	Seattle.	5,919	5,919	4,389
Vancouver Maru.	25	23	10	26	11	10	26	18	19	Japanese.	385.0	51	0	14	Rotterdam.	Portland.	2,492	2,492	
Cesar.	19	12	30	27	6	10	27	15	33	American.	307.0	43	0	18	New York.	San Diego.		3,795	2,792
Begonia No. 1.	25	12	35	27	6	25	27	15	30	Spanish.	330.0	47	0	12	St. Vincent.	Astoria.	278	5,531	3,773
Bologna	24	12	13	27	7	25	27	13	25	Italian.	380.0	47	0	18	Copen.	Valparaiso.	6,430	7,133	5,263
Bolivia	24	13	03	27	8	10	27	15	58	Danish.	399.9	56	0	23	Geneva.	Vancouver.	8,413	8,413	5,971
Eastern Prince	26	3	50	27	8	35	27	16	37	British.	469.0	58	0	18	Oslo.	Portland.	280	5,128	3,697
Spectator	26	16	10	27	9	03	27	17	20	British.	384.0	50	0	16	Liverpool.	San Francisco.	81	4,838	2,939
Mantaro.	19	20	45	27	10	55	27	18	22	Peruvian.	367.0	46	0	19	Cristobal.	Guayaquil.	8,666	8,666	4,960
Pako	27	6	10	27	11	00	27	19	10	British.	450.0	58	0	29	Glasgow.	Auckland.	463	1,273	706
Acapulco	17	17	00	28	6	18	28	14	25	British.	216.0	34	0	14	Cristobal.	Guayaquil.	559	1,187	622
Jamaica	26	7	05	28	6	34	28	15	50	British.	220.0	34	0	14	San Marta.	Tumaco.	15,286	15,286	14,187
Hoosier State	26	14	05	28	7	34	28	16	24	American.	516.0	72	0	24	Philadelphia.	San Francisco.	6,500	5,948	4,462
Eastern Queen	26	10	50	28	8	05	28	16	18	American.	384.0	51	0	27	New York.	Sydney.	118	5,857	4,166
Saint Louis	26	10	50	28	8	05	28	16	18	French.	397.0	50	0	15	Havre.	Talcahuano.	137	1,213	692
Salvador	27	17	05	28	10	20	28	16	55	British.	215.0	34	0	12	Cristobal.	Guayaquil.	2,300	699	388
Aloha.	24	14	45	28	9	23	28	17	45	American.	219.0	31	0	18	New York.	Honolulu.	75	132	72
Stanley Dollar.	28	3	08	28	11	40	28	18	37	American.	289.0	45	0	18	Boston.	Buenaventura.	2,300	3,460	2,414
Leura C. Hall.	28	19	00	28	11	30	28	19	42	British.	81.0	25	0	10	Cristobal.	General.			
Caruco 2220.	28	19	44	28	12	46	28	14	02	Panaman.				Gatun Lake.	Cristobal.				
Redwing.	28	19	44	29	12	45	29	13	40	American.	346.0	44	0	23	Norfolk.	Gatun Lake.	602	3,819	2,632
Jan Van Nassau.	28	23	10	29	6	15	29	13	47	Dutch.	461.0	60	0	23	Amsterdam.	Guayaquil.	10,000	8,672	6,481
Pietro.	28	12	00	29	7	22	29	15	30	American.	472.0	57	0	22	Porto Lobos.	Tokoyama.	2,873	9,258	6,912
Mexican.	29	8	43	29	9	00	29	16	25	American.	425.0	55	0	15	Boston.	Seattle.		7,017	4,763
Veerdijk.	29	9	20	29	10	20	29	17	47	Dutch.				Norfolk.	Vancouver.	General.			
Edgar F. Luckenbach.	29	16	57	29	12	45	29	19	38	American.	425.0	57	0	19	Philadelphia.	Seattle.	2,500	8,568	6,996
Destroyer.										Collier.						General.			
										Yacht.						Motor schooner.			
																Tug.			
																to tow target raft No. 48.			

* Yacht.

* Collier.

* Destroyer.

* Motor schooner.

* Tug, towing target raft No. 48.

Quincy ⁴	28	13	30	30	6	13	30	14	11	30	19	12	American	United States Navy	350	0	51	0	26	6	Norfolk	San Diego	Naval stores	3,000	
Barrmore	29	21	45	30	7	35	30	14	11	30	14	15	British	Furness Withy & Co.	420	0	53	0	15	6	Liverpool	Seattle	Ballast	6,928 4,623	
Mewu Maru	30	2	18	30	8	27	30	16	10	30	22	06	Japanese	Taisha Kawn Kabushiki Kaisha	443	0	55	0	16	0	Liverpool	Portland	Ballast	8,269 5,979	
Melville Dollar	30	7	47	30	9	20	30	16	31	30	20	15	American	Robert Dollar Co.	370	0	50	0	20	0	New York	San Juan River	General	3,021 5,153 3,938	
Marechal Foch ⁵	12	21	15	30	6	20	1	15	34	30	2	14	33	American	Pacific Metals Transp. Co.	120	0	60	0	7	6	New Orleans	Los Angeles	General	2,912 7,704 5,707
Eastern Sailor	30	14	11	1	6	55	1	14	35	1	15	30	American	Williams Dimond & Co.	415	0	56	0	20	8	Liverpool	Los Angeles	General	2,912 7,704 5,707	
Queen Mar-	30	15	21	1	8	37	1	15	31	1	16	38	British	Thos. Donlop & Son	405	0	50	0	16	0	Barry	Portland, Ore.	Ballast	5,556 4,020	
Edward Luck-	30	15	58	1	9	02	1	16	34	1	17	30	American	Luckenbach Line	456	0	57	0	21	6	New York	Los Angeles	General	2,500 8,547 6,427	
Port Hacking	1	6	32	1	9	42	1	17	17	1	18	00	British	Commonwealth and Dom. Line	440	0	55	0	21	6	London	Sydney	General	4,000 7,883 5,847	
Bowes Castle	30	10	05	1	10	20	1	17	58	1	19	05	British	J. Chambers	531	0	63	0	25	6	New York	Yokohama	General	7,826 6,674 4,698	
Northumber-	1	6	46	1	10	45	1	19	25	1	20	10	British	Federal Steam Navigation Co.	386	0	49	0	24	3	Barry	Portland	Ballast	12,821 8,700	
land	1	8	34	1	12	20	1	20	12	2	1	10	British	Australind Steamship Co.	385	5	43	0	24	0	Port Arthur	Freemantle	Oil	5,008 4,825 3,601	
Abol	1	8	34	1	11	30	1	13	15	1	13	15	American	E. J. Hooper	386	0	49	0	24	0	Cristobal	Gatun Lake			
Ruby ⁵																									

* Supply ship.

† Dredge.

* Launch.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Argosy	24	15	20	25	6	54	25	14	17	25	12	17	American	Wessel-Duval (S. B.)	390	0	54	2	26	6	Talcahuano	Charleston	Nitrate	7,256 6,161 4,433
Donald McKay	16	22	00	25	7	38	25	15	50	25	21	05	American	U. S. & Australian Lines (S. B.)	400	7	54	2	20	6	Melbourne	New York	Copra	5,826 6,528 4,730
Bulla	25	13	50	26	7	00	26	15	20	26	17	00	British	King George No. 5	400	3	52	7	24	6	Sydney	London	General	5,586 6,550 4,383
American	25	14	20	26	7	41	23	15	10	26	15	10	American	American-Hawaiian Line	424	8	51	1	21	6	Seattle	Boston	General	3,953 5,983 4,226
Salma City	25	19	27	26	8	43	26	16	18	26	18	18	American	United States Steel Products Co.	424	2	56	2	23	8	San Francisco	Philadelphia	General	7,010 7,539 5,448
Laura C. Hall	25	14	40	26	8	56	26	19	00	27	6	20	British	United Metals Corporation	424	2	56	2	23	8	Buenaventura	Cristobal	Coffee, gold	67 132 72
Steel Mariner	26	10	25	26	10	53	26	19	20	27	6	20	American	United States Steel Products Co.	424	2	56	2	26	0	Vancouver	Liverpool	General	7,856 7,539 5,448
Taihu Maru	26	21	40	27	7	44	27	16	15	28	14	45	Japanese	Kokusai Kisen Kaisha	407	2	50	8	26	0	Portland	Ireland	Wheat	7,400 6,170 4,537
Varg	27	2	00	27	8	24	27	16	15	28	14	45	Norwegian	P. Johanssen	282	0	35	0	15	6	Guayaquil	Pto. Colombia	General	1,155 1,496 1,040
Jelapa	27	7	45	27	8	41	27	17	25	27	22	25	Amerian	Thorndyke-Trenholme (S. B.)	492	6	53	0	27	0	Portland	Barcelona	Wheat	7,685 6,580 4,556
Great Northern	25	12	45	27	10	08	27	17	05	27	17	05	British	United States Government	509	5	63	1	23	1	San Francisco	New York	Navy supplies	30,100 863 6,485
Shelley	27	10	40	27	11	10	27	19	10	27	19	10	British	Shakopee Shipping Co.	399	7	52	8	24	5	San Francisco	United King	Barley	7,104 6,051 4,399
Sotola	27	15	28	28	8	02	28	14	21	29	15	30	American	United States Navy	149	4	30	0			Balboa	Cristobal		
O-15 ⁶	9-6	14	54	28	8	00	28	14	29	29	15	30	American	United States Navy	175	0	16	4			Balboa	Cristobal	General	6,500 7,983 5,832
Wilsoo	28	21	00	29	7	55	29	15	30	29	15	30	American	Williams Steamship Co.	434	3	57	7	25	6	Portland	New York	Wheat	5,390 4,683 3,441
Montrose	29	2	00	29	8	06	29	16	55	29	17	46	British	Wanderland Co.	385	0	47	3	23	6	Portland	Norfolk	General	5,230 4,069 3,107
Wilfred	29	4	00	29	9	41	29	18	00	30	7	35	British	Nordenfjeldske Co.	339	1	48	2	24	0	Talcahuano	Humboldt	General	5,104 6,533 4,914
West Notus	30	4	30	30	9	41	30	18	01	30	15	01	American	Swaine & Hoyt (S. B.)	410	5	51	3	23	0	San Francisco	Buenos Aires	General	763 1,357 884
Manan	30	8	40	30	9	41	30	17	05				British	Pacific Steam Navigation Co.	216	0	35	1	14	8	Guayaquil	Cristobal	General	183 1,651 918
Barin	30	11	30	30	12	26	30	18	25				British	Pacific Steam Navigation Co.	220	0	37	0	10	9	Champerico	Cristobal	General	183 1,651 918
Santa Tecla	1	3	45	1	7	40	1	15	10	1	21	05	American	W. R. Grace & Co.	298	6	40	0	18	0	Pisro	New York	General	1,451 2,833 1,827

* Tug.

* Submarine.

* Gasoline and general.

* Nitrate and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

(Continued on page 132, column 2.)

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending October 1, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Acajutla.....	Pacific Steam Navigation Co.....	.....	September 28.....	.....	479
Mantaro.....	Peruvian Steamship Line.....	.....	September 27.....	.....	.....
Adna.....	Anglo-Saxon Petroleum Co.....	.....	September 24.....	.....	.....
Bologna.....	Italian Steamship Co.....	.....	September 27.....	.....	.....
Solana.....	Pacific Mail Steamship Co.....	.....	September 25.....	.....	.....
Venezuela.....	Pacific Mail Steamship Co.....	September 25.....	September 26.....	139	407
Abangarez.....	United Fruit Co.....	September 25.....	September 25.....	$\frac{1}{2}$	1
Parismina.....	United Fruit Co.....	September 26.....	September 29.....	813	37
Bolivia.....	Orient Limited Steamship Co.....	September 26.....	September 27.....	481	.....
Jamaica.....	Pacific Steam Navigation Co.....	September 26.....	September 28.....	.....	43
Parana.....	Pacific Steam Navigation Co.....	September 26.....	September 26.....	70	540
Laura C. Hall.....	Pacific Metals Corporation.....	September 26.....	September 28.....	67	.....
Spectator.....	Leyland Line.....	September 26.....	September 27.....	360	.....
Varg.....	P. Johannessen.....	September 27.....	September 28.....	119 $\frac{1}{2}$	.....
Saint Louis.....	French Line.....	September 27.....	September 25.....	42	.....
Pastores.....	United Fruit Co.....	September 27.....	September 28.....	288	153
Abangarez.....	United Fruit Co.....	September 28.....	September 28.....	.....	15
Gen. G. W. Goethals.....	Panama Railroad Steamship Line.....	September 28.....	.....	977	.....
Quincy.....	United States Government.....	September 28.....	September 30.....	116	.....
Jan Van Nassau.....	Royal Netherlands W. I. Mail.....	September 28.....	September 29.....	202	.....
Puerto Rico.....	French Line.....	September 28.....	September 30.....	28	12
San Blas.....	United Fruit Co.....	September 28.....	September 28.....	8	.....
Caribbean.....	Panama Railroad Steamship Line.....	September 29.....	.....	800	.....
Manavi.....	Pacific Steam Navigation Co.....	September 30.....	.....	760	.....
Barima.....	Pacific Steam Navigation Co.....	September 30.....	.....	183	.....
Canada.....	Johnson Line.....	October 1.....	.....	37	.....
Allianca.....	Panama Railroad Steamship Line.....	October 1.....	.....	565	.....

Notice to Mariners.—Obstructions to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., September 22, 1921.

CIRCULAR No. 643-93:

The master of the steamship *West Camak* reports by radio having passed at 2.20 p. m., on September 20, while in latitude 11° 13' North, longitude 77° 29' West, an upright spar about 2 feet in diameter, extending 2 feet above the water. He also reports having passed at 2.30 p. m., a piece of wreckage appearing to be part of a keel, about 40 feet long. Both dangerous to navigation.

M. L. WALKER,
Acting Governor.

Notice to Mariners.—Establishment of Zamba Point Light, Colombia.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., September 28, 1921.

CIRCULAR No. 643-94:

The Port Captain, Cristobal, has received the following notice, dated September 26, 1921, from Master Ellis Roberts, of the Royal Mail steamship *Jamaica*:

"I have the pleasure to inform you that a flashing light on Zamba Point, latitude 10° 48' North, longitude 75° 20' West, is now in working order. I observed the light at an approximate distance of 12 miles.

Character of light: Flashing white, every 3 seconds."

M. L. WALKER,
Acting Governor.

Dutch Shipping and the Panama Canal.

There are two Dutch lines operating through the Panama Canal, the Royal Netherlands West India Mail, which maintains a service between Hamburg, Amsterdam, Rotterdam and the west coast of South America, and the Holland-American Line between Rotterdam,

* This is the ninth of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, Danish, Swedish, Chilean, and Peruvian shipping.

London and the west coast of North America. The former company put 30 vessels through the Canal during the fiscal year 1921, and the latter 16, out of a total of 50 vessels under the Dutch flag.

The table shows the number of vessels in either direction during the past 7 years:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915.....	5	2	7
1916.....	11	4	15
1917.....	36	38	74
1918.....	31	18	49
1919.....	6	13	19
1920.....	17	12	29
1921.....	26	24	50
Totals.....	132	111	243

Of the 26 vessels passing from Atlantic to Pacific during the past year, 16 were bound from Europe to South America with 36,127 tons of cargo, and 10 from Europe to North America. Two of the latter were in ballast, and the remaining 8 carried 9,979 tons of cargo.

Of the 24 vessels passing from Pacific to Atlantic, 13 were bound from South America to Europe with 80,398 tons of cargo, 10 from North America to Europe with 86,284 tons, and 1 from South America to the United States with 3,700 tons. The total cargo from Atlantic to Pacific was 46,106 tons, and in the opposite direction 170,382 tons.

The Holland-American Line is offering refrigerated space for the shipment of apples and other fruits from the Pacific coast to the United Kingdom and Europe. Fresh meats and tallow are being shipped in cold storage over this line.

French Shipping and the Panama Canal.*

The volume of French shipping through the Panama Canal has been subject to extreme fluctuations due to war and post-war conditions. The record of the 7 fiscal years from 1915 to 1921 is shown in the following table:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915.....	2	1	3
1916.....	1	1	2
1917.....	4	5	9
1918.....	19	33	52
1919.....	29	75	104
1920.....	9	51	60
1921.....	26	18	44
Totals.....	89	184	273

The only French line with regular sailings through the Canal in 1921 was the Compagnie Generale Transatlantique, which maintains a service between Havre, Antwerp, Hamburg, Bordeaux and ports on the west coast of South America. It put through 10 southbound and 9 northbound vessels. Other French shipping companies which contributed to the traffic were: Societe Generale d'Armement with 7 transits, Compagnie Francaise d'Armement d'Importation de Nitrate

* This is the tenth of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, Danish, Swedish, Chilean, Peruvian, and Dutch shipping.

de Soude with 5, Societe Generale de Transports Maritimes a Vapeur with 4, French Government with 4, and Societe Anonyme de Peche with 1.

During 1921 there were 10 vessels from Europe to South America with 10,193 tons of cargo, 2 from the United States to South America with 11,904 tons, 7 sailing ships in ballast and 3 steamers carrying 6,485 tons of cargo from Europe to North America, and 2 tankers with 5,571 tons of oil from the east coast to the west coast of Mexico. There were 13 vessels from South America to Europe with 82,394 tons, 1 from South America to the United States with 6,120 tons, 2 from North America to Europe with 10,169 tons, and 2 tankers returning in ballast from the west to the east coast of Mexico.

The total cargo from Atlantic to Pacific was 34,153 tons, and in the opposite direction 98,683 tons.

Spanish Shipping and the Panama Canal.

No vessel under the Spanish flag passed through the Panama Canal in 1915 and 1916. The number of vessels recorded in 1917 and subsequent years is shown in the table:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1917.....	10	10	20
1918.....	5	7	12
1919.....	2	3	5
1920.....	20	21	41
1921.....	22	22	44
Totals.....	59	63	122

There is no Spanish line with regular sailings operating through the Canal. Of the 22 vessels southbound during the fiscal year 1921, 1 was a battleship and the remaining 21 tramp steamers from European and North American ports to Chile. Seven of them carried coal cargoes (32,156 tons) from the United States, and 14 were in ballast. The 22 vessels northbound all carried nitrate (110,920 tons) from Chile to the United States or Europe. The last of them went through in February.

Italian Shipping and the Panama Canal.²

Very few Italian vessels used the Canal prior to the fiscal year 1920, as the following table shows:

Fiscal year.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
1915.....	1	1	2
1916.....	1		1
1917.....	1	1	2
1918.....	2	2	4
1919.....			
1920.....	13	13	26
1921.....	13	12	25
Totals.....	31	29	60

¹ This is the eleventh of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, Danish, Swedish, Chilean, Peruvian, Dutch, and French shipping.

² This is the twelfth of a series of articles on trade through the Panama Canal under different national flags. Those previously published concerned American, British, Japanese, Norwegian, Danish, Swedish, Chilean, Peruvian, Dutch, French, and Spanish shipping.

In the fiscal year 1921 all of the Italian vessels passing through the Canal belonged to two lines maintaining regular services between Genoa and Valparaiso, calling at numerous waypoints in the Mediterranean, the Caribbean and on the west coast of South America. These were the Navigazione Italiana a Vapore, (La Veloce), and the Societa Nazionale di Navigazione. The former had 5 steamers southbound and 5 northbound, and the latter 8 southbound and 7 northbound. The total southbound cargo carried through the Canal by these two lines was 14,925 tons, and the total northbound cargo, 33,063 tons.

Coal Bunkering Quotations.

Wilson, Sons & Co., Ltd., Salisbury House, London, have furnished the following list of current prices of bunker coal, as of August 30. All prices quoted are subject to confirmation:

Dover, Durham unscreened, 50/ f. o. b. in lock.	Buenos Aires, Welsh or other available, 70/ f. o. b. from September 1.
Dartmouth, Dominion or North Country, 50/ f. o. b.	Rosario, Welsh or other available, 72/6 f. o. b. from September 1.
Portland, Dominioh, Welsh, or North Country, 50/ f. o. b.	Bahia Blanca, Welsh or other available, 74/ f. o. b. from September 1.
Plymouth, Welsh or North Country, 75/ f. o. b.	Gibraltar, Welsh or other available, 50/ f. o. b.
Lisbon, Pocahontas, Welsh, or North Country, 57/6 f. o. b.	Malta, Welsh or other available, 60/ f. o. b.
Madeira, Welsh or other available, 60/ f. a. s.	Oran, Welsh or other available, 50/ f. o. b.
57/6 from September 5).	Algiers, Welsh or other available, 50/ f. o. b.
Las Palmas, Welsh or other available, 60/ f. a. s.	Constantinople, Welsh or Turkish, 75/ f. o. b.;
57/6 from September 5).	American, 77/6 f. o. b.
Teneriffe, Welsh or other available, 60/ f. a. s.	Alexandria, Welsh or other available. On application.
57/6 from September 5).	Port Said, Welsh or other available, 62/6 f. o. b. from September 1.
St. Vincent, Welsh or other available, 62/6 f. a. s.	San Juan, Porto Rico, Pocahontas and/or New River, \$14.25 trimmed.
60/ from September 5).	Bermuda, Pocahontas and/or New River, 75/ trimmed.
Dakar, Welsh or other available, 62/6 f. o. b.	Norfolk, Pocahontas and/or New River, about \$6.15 at chutes.
60/ from September 5).	Newport News, Pocahontas and/or New River, about \$6.15 at chutes.
St. Michaels and Fayal, Azores, Welsh or other available, 75/ trimmed.	Pensacola and Mobile; Black Creek, Cahaba, or Pratt prepared, \$5.25 f. o. b. under tipple.
Pernambuco, Welsh or other available, 82/6 f. o. b. from September 1.	Hamburg, Saar, screened and unscreened, 57/ f. o. b.
Bahia, Welsh or other available, 82/6 f. o. b. from September 1.	Vigo, Corunna, Bilbao, Huelva, Welsh, 60/ f. o. b.
Rio de Janeiro, Welsh or other available, 75/ f. o. b. from September 1.	Barcelona, Welsh, 65/ f. o. b.
Santos, Welsh or other available, 77/6 f. o. b. from September 1.	
Montevideo, Welsh or other available, 70/ f. o. b. from September 1.	
La Plata, Welsh or other available, 70/ f. o. b. from September 1.	

The Radio System on the Isthmus.

The system of radio communication operated by the Navy Department on the Isthmus contains 7 stations. The only other commercial station on the Isthmus is that of the United Fruit Company at Almirante, which has been specifically licensed to operate. The laws of Panama and the Canal Zone restrict radio operations to the control of the United States.

The Navy stations consist of the high-power station at Darien; the stations at Balboa and Colon, at the two ends of the Canal; a station at Coco Solo, primarily for naval use in local operations; and 3 outlying stations—at Punta Mala, on the western side of the entrance to the Gulf of Panama; at La Palma, diagonally opposite, on the Bay of San Miguel; and at Puerto Obaldia, on the Atlantic coast, about 2 miles from the border of Colombia.

In present practice the Darien and Balboa stations are operated together, practically as one station. Messages are received at Balboa, but not at Darien; and all sending from Balboa is done through the

Darien station. Outgoing messages are telegraphed from Balboa by land wire to Darien, where the electric impulses, operating through solenoid devices, actuate the transmitting mechanism. The three 600-foot towers at Darien carry 3 sets of antennæ. One set is for the "big arc" transmission to Arlington station, near Washington, to San Diego, and for other long-distance service; the other sets are "spark" antennæ, for local use and messages to ships as close as 1,000 miles.

San Diego is about 3,000 miles, by air, from Darien, and this distance may be accepted as Darien's regular and reliable sending range. Instances have been recorded, however, of the station's having been heard at a station in Australia, over 7,000 miles away, and by a ship at sea passing from Colombo to Aden, practically on the opposite side of the world and approximately 12,000 miles away (the steamship *M. S. Dollar*, January 21, 1921). The station has heard messages sent out from Nauen, near Berlin, San Francisco, Honolulu, and other remote points; but the range from which messages may be received is a function of the other station's transmitting power rather than of the capacity of the receiving station.

The stations at Balboa and Colon handle most of the communication with ships. The Balboa station works primarily with ships on the Pacific side, receiving their messages on the Balboa antenna and transmitting communications to them through Darien. As a rule, communication with vessels outside the Gulf of Panama is handled through the Punta Mala station; communication between the Cape Mala and Balboa stations is by either land telegraph or radio.

The Colon station works with ships on the Atlantic side, and normally communicates with them direct throughout the Caribbean area.

The Balboa station handles about 12,000 words of commercial traffic per month, Colon about 11,000, and Punta Mala about 3,500. The messages average about 15 words each. No commercial traffic is handled by the Navy radio stations between the Isthmus and points in the United States. Such business is handled by the cable lines, with the exception of company's business handled by the United Fruit Company's station at Almirante.

The bulk of the commercial business through the Navy stations is messages between steamship agents and vessels, or between the vessels and the Port Captains, with some personal messages to or from passengers. The service is available, however, for the transmission of communications between the Isthmus and points in Panama, Colombia, Ecuador, and Venezuela, to the south, and to Costa Rica, in the opposite direction.

The outlying stations at La Palma and Puerto Obaldia afford the only means of quick communication with the sections of Panama adjacent to them, as there are no telegraph or telephone lines extending into those areas from the capital. That part of the Isthmus, roughly designated as "the Darien region," is very slightly developed. On the Punta Mala side of the Gulf the telegraph lines of the Republic of Panama reach all the principal towns.

La Palma and Punta Mala stations are about 100 miles from Balboa and the Puerto Obaldia station is about 180 miles from Cristobal. Each is in charge of an electrician, with the necessary operators for the regular watches. A tug goes from the Canal to each station once a

month, carrying supplies and mail. In practice, operators are not allowed to serve at one of the outlying stations for more than a year at a time, because in the environment of easy service, tropical surroundings, and absence of routine discipline they usually grow slack, hence in justice to the men and to the service they are not allowed to stay too long.

The oldest of the stations in point of service is that at Colon. Authority for the erection of the original station was issued in the latter part of 1904, and the station was established the following year. New apparatus was installed in 1910. The station was opened to the handling of commercial business in January, 1913. In 1914 was begun the erection of the present station, which was completed in 1915. Improved equipment was installed, and the 280-foot vertical masts were supplanted by the present 300-foot pyramidal towers, spaced 600 feet apart.

A small station at Porto Bello was opened on December 31, 1909, and used through the construction period for the transmission of messages, by way of Colon, between Porto Bello and the administrative headquarters on the Canal Zone. The Porto Bello station was approximately 17 miles from Colon. It used a 520-foot circle aerial mounted on a 150-foot mast. The station was operated until May 13, 1914, when American operations at the place were discontinued and the station was closed.

The original Balboa station was erected at the foot of Sosa Hill, in the early part of 1913, and was opened to commercial business in June of that year. It used one 110-foot mast and the smokestack of the old electrical plant at Balboa for the support of the aerial, and had a normal sending radius of 200 miles. In 1915 it was supplanted by the present station, adjoining Fort Amador. The present station, like that at Colon, has its aerial supported on two 300-foot towers, 600 feet apart, and has a normal sending radius of 500 miles.

The Darien station is situated alongside the Canal at a point almost exactly midway between the Atlantic and the Pacific. Its erection was begun on July 9, 1914, and was completed the following May, although the handling of Government messages through the station had been begun on April 5, 1915. The Darien station is, in general, like that at Arlington, Va., a 100-kilowatt plant with a normal sending radius of 3,000 miles. The aerials are carried on three 600-foot pyramidal towers, standing at the points of an equilateral triangle, 900 feet on the side. With its normal range the station can communicate to San Francisco, to a point 400 miles south of Valparaiso, to Buenos Aires, or to St. Vincent, about 500 miles west of the coast of Africa.

Of the outlying stations, that at Punta Mala was placed in operation in May, 1919. The La Palma station was opened in July, 1919, and that at Puerto Obaldia in January, 1920. The outlying stations carry their antennæ on two 200-foot masts, 300 feet apart, and have a normal sending radius of approximately 200 miles.

Current Net Prices on Coal, Fuel Oil, and Beef.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$15 per ton of 2,240 pounds at Cristobal and \$17 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$15 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or more, the price is \$16 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

The following are current prices on fresh beef sold from the cold storage plant of the Canal. Prices quoted are United States currency, per pound net:

Beef hinds, 21 cents; beef fores, 13½ cents; beef ribs, entire set, 21 cents; short loins, 30 cents. This beef is from Colombian cattle slaughtered on the Isthmus.

Hogs For Sale.

The following hog stock is offered for sale, f. o. b. the Margarita hog farm:

6 grade boars, three-quarters Duroc, 1 year old.

14 grade boars, bred from three-quarters Duroc sow and full-blooded Hampshire boars, from 3 to 6 months old.

3 boars, seven-eighths Duroc, 4 to 5 months old.

For further information inquire at the Cattle Industry office in Cristobal.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10" dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 125.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Sept. 25	Abangarez	United Fruit Co.	New Orleans.	Sept. 25	Abangarez	United Fruit Co.	Bocas del Toro.
Sept. 26	Parismina	United Fruit Co.	New Orleans.	Sept. 25	Solana	Pacific Mail Steamship Co.	Tampico.
Sept. 27	Pastores	United Fruit Co.	New York.	Sept. 28	Abangarez	United Fruit Co.	New Orleans.
Sept. 27	San Blas	United Fruit Co.	Boston.	Sept. 28	Pastores	United Fruit Co.	New York via Port Limon.
Sept. 28	Abangarez	United Fruit Co.	Bocas del Toro.	Sept. 28	San Blas	United Fruit Co.	Boston, via Port Limon.
Sept. 28	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	New York via Haiti.	Sept. 28	Parismina	United Fruit Co.	New Orleans via Bocas del Toro.
Sept. 28	Puerto Rico	Panama Railroad Steamship Line.	St. Nazaire.	Sept. 29	Puerto Rico	French Line	St. Nazaire, via Colombia.
Sept. 29	Caribbean	Panama Railroad Cattle Industry.	Cartagena.	Sept. 30	Tedisco	Curacao Shipping Co.	San Lorenzo.
Sept. 29	Bayano	Elders & Fyffes, Ltd.	Port Limon.	Oct. 1	Bayano	Elders & Fyffes, Ltd.	Bristol, via Kingston.
Oct. 1	Allianca	Panama Railroad Steamship Line.	New York via Haiti.	Oct. 1			
PORT OF BALBOA.							
Sept. 25				Sept. 25	Choyo Maru.	Toyo Kisen Kaisha.	Valparaiso.
Sept. 26				Sept. 26	Rakuyo Maru.	Toyo Kisen Kaisha.	Hongkong.
Sept. 28				Sept. 28	Libia ¹ .	Italian Government.	San Francisco.

¹Other than ships passing through the Canal.

¹Cruiser.

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Volume XV.

Balboa Heights, C. Z., October 12, 1921.

No. 9.

The Increasing Fresh Fruit Shipments.

Declared shipments of fresh fruits in refrigerated or ventilated space through the Panama Canal during the 8 months of this year ending August 31, aggregated 7,132 tons. Of this quantity, 5,927 tons were shipped from the west coast of the United States, 1,193 tons from Australia and New Zealand, 10 tons from the west coast of South America and 2 tons from the west coast of Central America.

All of the fruit from Australasia and 149 tons of that from the west coast of the United States, an aggregate of 1,342 tons, went to the United Kingdom. The 2 tons from the west coast of Central America were discharged at Cristobal. The 10 tons from the west coast of South America went to the United States. The 5,927 tons from the west coast of the United States were distributed as follows: One hundred and forty-nine tons to the United Kingdom, 1,023 tons to other countries of western Europe, and 4,745 tons to the east coast of the United States.

In the fresh fruit trade the unit is boxes rather than tons. Counting 30 boxes to the long ton, the shipments through the Canal in the period aggregated 213,960 boxes, and those from the west coast of the United States, 177,810 boxes.

That this quantity will be doubled by the end of the year is indicated by a statement in the *Shipping Register*, of San Francisco, to the effect that 6 steamships of the Royal Mail and the Holland-American Line's joint service will load more than 300,000 boxes of apples in Seattle for England and continental Europe between October 15 and December 15. The *Cardiganshire*, it is reported, is due to take 40,000 boxes and the *Moliere* 80,000 this month, the *Nebraska*, *Kinderdyk*, and *Eemdyk* a total of 160,000 boxes in November, and the *Moerdyk* 40,000 boxes in December. This is in the apple trade from Seattle alone, and in addition to shipments of fresh fruits from other ports.

Canal Revenues and Expenses of Operation and Maintenance.

The fiscal year ending June 30, 1921, was the fourth consecutive year in which the Canal has earned an excess of revenues over the expenses of operation and maintenance; and the excess in the past year was sufficient to wipe out the last of the deficit in the account which had resulted from the slides in Gaillard Cut in the earlier years of Canal operation. For the year the excess of revenues over cost of operation and maintenance was \$2,711,918.56; and for the entire period of Canal operation it was approximately \$420,000. (Four hundred eighty thousand seven hundred twenty-four dollars and ninety-five cents less approximately \$60,967.60 due to the steamship operators as refunds.)

During the fiscal year ending June 30, 1921, the ordinary expenses for the operation and maintenance of the Canal, including those of civil government and sanitation, amounted to \$9,328,300.14, compared

with \$6,548,272.43 in 1920, \$6,112,194.77 in 1919, \$5,920,342.94 in 1918, and \$6,788,047.60 for the year 1917. Out of a total of \$5,745,053.91 included in the overhead expense accounts, the sum of \$4,711,046.99 was the proportion added to what are considered the direct expenses of operation and maintenance (viz., the expense of passing vessels through the Canal, including the operation of locks and the maintenance of the channel), to obtain the total expenses of operation and maintenance of the Canal. The overhead account includes the expenses of civil government, hospitals, quarantine, and sanitation, the Executive Department, the Accounting Department, the Washington Office, clubhouses, operation and repairs of storehouses and quarters, lighting of streets, operation of water and sewer systems, and roads, etc.

The increase of \$2,780,027.71 in the cost of operation and maintenance for the year 1921 over the preceding year resulted from a number of causes, all culminating during the fiscal year. Wages reached their highest point during the year, and all material used was that purchased at the top of the market. Considerable necessary repair work was done on equipment, which had been previously postponed on account of the congestion caused by commercial work. Also, the reduction in forces and the reorganization necessary on account of the great reduction in commercial work, due to the general depression, etc., could not be brought about simultaneously with the reduction in work, nor in any case could it be followed by an entirely corresponding reduction in expenses.

Revenues for the year exceeded those of the preceding year by \$3,104,245.13, due principally to an increase in traffic and to an increase of \$324,525.07 in the profits on business operations, such as sales of fuel and supplies.

The revenues for the year consisted of the tolls earned on vessels passing through the Canal, \$11,261,919.31; licenses and taxes, court fees and fines, \$188,986.19; interest on balances in banks, \$25,000; and profits on business operations \$564,211.20, a total of \$12,040,116.70.

The revenues earned in excess of current expenses were accordingly \$2,711,816.56. The charges for operation and maintenance do not include, with minor exceptions, any allowance for depreciation of plant and equipment, nor do they include any interest charges on the capital investment.

The cost of the Canal to June 30, 1921 (\$368,543,271.95) is itemized as follows: Cost of Canal, exclusive of coal and fuel oil plants, shops, dry docks, and piers, to June 30, 1921, \$335,524,258.70; equipment, exclusive of colliers and coal barges, \$8,261,682.35; shops, dry docks, and piers, \$13,457,841.77; fuel oil plants, \$1,019,358.81; coaling plants, including colliers and barges, \$10,280,130.32; total, \$368,543,271.95. This may be considered the capital investment as of that date, although it does not include the value of the stock of material and supplies in the storehouses; nor does it include reequipment and first mortgage loans to the Panama Railroad, \$3,247,332.11, which may be repaid or covered by exchange of revenue-producing property; cost of public works in Panama and Colon, \$2,674,453.53, which is being reimbursed, with interest; value of property transferred to other departments and the Panama Railroad with book credit only, \$3,290,252.21; nor interest on Canal bonds, and cost of constructing fortifications.

Including expenditures in previous years, the aggregate of expenditures charged to operation and maintenance of the Canal to June 30, 1921, was \$45,986,067.03. The revenues offsetting this amounted to \$46,466,791.98, less approximately \$60,967.06 yet to be refunded on account of erroneous collection of tolls. The recorded excess of revenues over the cost of operation and maintenance for the period of Canal operation to June 30, 1921, was therefore \$480,724.95 less about \$60,967.06, or approximately \$419,757.89.

The cost of operation and maintenance and the revenues earned during the period of Canal operation, with the variations in the balance in this account, are shown in this statement:

	Maintenance and Operation, including proportion of overhead.	Revenues.	Revenue in excess of expenses.	Expenses in excess of revenues.	Excess of revenues over expenses to end of year.	Excess of expenses over revenues to end of year.
1914.....	\$166,030.91	\$14,618.68		\$151,412.23		\$151,412.23
1915.....	4,123,128.09	4,343,383.69	\$220,255.60		\$68,843.37	
1916.....	6,999,750.15	2,558,542.38		4,441,207.77		4,519,177.92
1917.....	6,788,047.60	5,808,398.70		979,648.90		5,352,013.30
1918.....	5,920,342.94	6,411,843.28	491,500.34			4,860,512.96
1919.....	6,112,194.77	6,354,016.98	241,822.21			4,618,690.75
1920.....	6,548,272.43	8,935,871.57	2,387,599.14			2,231,091.61
1921.....	9,328,300.14	12,040,116.70	2,711,816.56		480,724.95	
Totals.....	45,986,067.03	46,466,791.98	6,052,933.85	5,572,268.90		
Balance surplus.....					480,724.95	

* Tolls on barges towed through the Canal, prior to opening to commercial ships.

* Heavy drop due to closing Canal 7 months on account of slides.

If the original Panama Canal rules of measurement and collection on the basis of cargo-carrying capacity had been used, the account would have shown on June 30, 1921, assuming the same quantity of traffic, an excess of revenues over expenses amounting to \$7,527,658.23.

The loss through not applying the Canal rules alone, but limiting the collections by the proviso that the amount collectible shall not exceed the equivalent of that obtained by multiplying the net tonnage as determined by measurement for registry in the United States by \$1.25, amounted to \$1,937,029.04 in the fiscal year 1921, in addition to which \$2,565.97 was refunded to operators for excess collections in previous years. The total loss, comprised of lessened collections, and refunds, has amounted to \$7,046,933.28 to the end of the fiscal year 1921, in which is included approximately \$60,967.06 yet to be refunded. By fiscal years the losses, counting the refunds made so far, have been:

Fiscal year.	Difference in tolls actually collected.	Refunds made later for excess collections during year.	Total.
1914.....			
1915.....		\$165,457.71	\$165,457.71
1916.....	\$390,714.05	22,110.46	412,824.51
1917.....	1,034,001.88	17,382.47	1,051,384.35
1918.....	1,083,111.69	8,701.09	1,091,812.78
1919.....	867,526.48	1,299.39	868,825.87
1920.....	1,445,117.50	10,948.49	1,456,065.99
1921.....	1,937,029.04	2,565.97	1,939,595.01
Totals.....	6,757,500.64	228,465.58	6,985,966.22



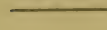
Adding to \$6,985,966.22 the sum of \$60,967.06 due to be refunded to ships' operators, disbursement of which had not been effected to the close of the fiscal year 1921, gives \$7,046,933.28 as the aggregate loss

in Canal revenues to June 30, 1921, as the result of the change of basis from the original Canal rules.

The chart below shows graphically the relation, by fiscal years, between the expenses of maintenance and operation of the Canal, and the revenues derived; and shows also the relation of the additional revenue which would have been derived under the application of the Canal rules.

Comparison of Expenses of Operation and Maintenance with Revenues, under present Rules of Measurement and Collection and under the Original Panama Canal Rules.

Fiscal year	
1914.	
Operation and maint.	\$166,030.91
Revenues.	\$14,618.08
Fiscal year	
1915.	
Operation and maint.	\$4,123,128.09
Rev. and P. C....	\$4,343,383.69 plus \$165,457.71.
Fiscal year	
1916.	
Operation and maint.	\$6,999,750.15.
Rev. and P. C....	\$2,558,542.38 plus \$412,854.21.
Fiscal year	
1917.	
Operation and maint.	\$6,788,047.60.
Rev. and P. C....	\$5,808,398.70 plus \$1,051,384.35.
Fiscal year	
1918.	
Operation and maint.	\$5,920,342.94.
Rev. and P. C....	\$6,411,843.28 plus \$1,091,812.78.
Fiscal year	
1919.	
Operation and maint.	\$6,112,194.77.
Rev. and P. C....	\$6,354,016.98 and \$868,825.87.
Fiscal year	
1920.	
Operation and maint.	\$6,548,272.43.
Rev. and P. C....	\$8,935,871.57 and \$1,456,065.99.
Fiscal year	
1921.	
Operation and maint.	\$9,328,300.14.
Rev. and P. C....	\$12,040,116.70 and \$1,939,595.01.
To end of fiscal year 1921.	
Excess of revenues over operation and maintenance.	\$419,757.89.
Under P. C. rules, excess of revenues over operation and maintenance would have been.	\$7,527,658.23.

 Expenses of operation and maintenance.
 Revenues actually earned.
 Additional tolls which would have been earned under application of Panama Canal rules of measurement and collection.

Possible Transfer of Steamers to Panaman Registry.

Sota y Aznar, shipowners of Bilbao, Spain, credited in the 1921-1922 edition of Lloyd's Register with 25 ocean-going steamers aggregating 89,126 gross tons, have made overtures to the Republic of Panama for the transfer of a part or all of their fleet to Panaman registry. This is the first application of the kind on record, and no law was found to cover it, the existing legislation of the Republic being applicable to the coasting trade, which has been heretofore the only maritime trade under the Panaman flag. By an Executive Decree dated October 7, 1921, the President of the Republic ruled that the vessels of Sota y Aznar might be admitted to registry, and that they will be subject to an annual tax of 10 cents per net registered ton. A registration fee of \$1 per net ton will also be collected.

Visit of Japanese Training Squadron.

The cruisers *Izumo* and *Yakumo*, comprising the midshipmen's training squadron of the Imperial Japanese Navy, arrived at Balboa on October 9 from San Diego. Vice-Admiral Saito is in command. An extensive program of entertainment and of showing the Canal and its terminal adjuncts has been arranged. The squadron is due to make the transit of the Canal on October 15, after which it will clear for New York, in the course of a voyage around the world.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended October 8:

Steamship *Argyll*, remove H. P. and I. P. eccentric straps; remove caps from main bearings; remove coupling bolts from main shaft; disconnect intermediate connecting rod; file faces of couplings; manufacture 1 taper reamer and 8 taper coupling bolts; remetal bearing cap; reassemble; supply boat *No. 2*, install new clutch.

PREVIOUSLY REPORTED.

Tug *Gatun*, dock, stage, clean, and paint; perform miscellaneous repairs; U. S. submarines *O-11*, *O-13*, and *O-14*, dock, stage, clean, and paint; perform heavy underwater C. and R. repairs and light engineering department repairs; launch *Pacific*, general repairs to hull; steamship *Panama*, reboiling and general overhaul to machinery and hull; barges *Nos. 101, 146, and 195*, dock, stage, clean, scale, and paint; steamships *Chifuku Maru*, repairs to main engine; *Cape Ortegai*, manufacture new H. P. cylinder head, 1 follower ring, and 30 studs.

The following vessels were at the Cristobal shops for repairs during the week ended October 10:

Steamship *General O. H. Ernst*, repair anchor windlass; repair door to bake oven; manufacture 1 belt shifter; braze steam line from throttle to by-pass valves; U. S. S. *Sciota*, repair anchor windlass as necessary; tug *La Boca*, dock and undock, clean and paint below water line; renew air pump plunger rod; renew lignum-vitæ in propeller shaft stern bushing and repack stern gland; grind-in boiler valves as designated by engineer; renew broken staybolts in boiler; overhaul all sea valves; dredge *Marmot*, dock and undock; clean and paint hull; scale where necessary; steamships *General W. C. Gorgas*, make repairs to Weir pump; make 2 iron hooks for gangway rest; make 12 file scrapers; cut off 5 inches in 1 iron strongback *No. 3* hatch; *Cristobal*, furnish 6 boiler scalers; install internal feed flanges in starboard boilers; furnish 1 cast-iron ring pot; furnish 3 auxiliary stop valve disks, one finished and two unfinished; repair suction to starboard *No. 4* tank; repair anchor windlass engine; launches *Doris*, *Mary B*, and *Activo*, steamships *Barima*, *Ucayali*, *Palena*, *Stuyvesant*, *Lake Hector*, *Tamar*, *Quilpue*, *Reading*, and *Astronomer*, minor repairs.

PREVIOUSLY REPORTED.

Bark *Golden Gate*, repair steering gear and rudderpost; steamships *Caribbean*, miscellaneous minor repairs; *Alianca*, miscellaneous engine department repairs; *General G. W. Goethals*, miscellaneous engine and deck department repairs, U. S. S. P. 1841, dock and undock; fit up for towing to the United States.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, October 8, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Buenos Aires ¹	1	14 14	2	6 28	2	14 23	2	15 16	Swedish	Johnson Steamship Line	440.0	56.0	16.0	Gothenburg	San Francisco	Ballast	1,006	7,591	5,661
Canada ¹	1	14 42	2	7 10	2	15 15	2	22 00	Swedish	Johnson Steamship Line	440.0	56.0	14.6	Gothenburg	Vancouver	Steel, etc.	6,036	7,476	5,456
Canadian Pioneer	1	16 49	2	8 45	2	16 10	2	17 30	British	Canadian Government	400.0	52.0	25.0	New York	Auckland	Oil and general	8,268	5,877	4,070
Robin Good-fellow	2	12 08	2	9 13	2	17 06	2	18 27	American	The Sea Shipping Co.	425.0	55.0	21.2	New York	Vancouver	General	6,360	7,473	5,624
Toba Maru	2	5 20	2	10 20	2	18 10	2	19 40	Japanese	Nippon Yusen Kaisha	445.0	58.0	21.7	New York	Shanghai	Steel, cotton, etc.	6,303	8,058	5,743
Rozan Maru	2	8 57	2	11 00	2	19 13	3	11 30	Japanese	Kokusa Kaishiki Kaisha	400.0	53.0	25.2	Galveston	Yokohama	General	23	5,914	4,295
Sarpfos	2	20 05	3	11 00	3	17 35	3	18 50	Norwegian	Thor Thoresen Line	255.0	39.0	11.6	New York	Guayaquil	General	8,949	2,064	1,479
Patuxent ²	4	6 35	4	6 35	4	13 45	4	17 40	American	United States Navy	470.0	56.0	28.6	Cristobal	Balboa	Oil	7,051	9,146	6,385
Kiyo Maru	4	4 05	4	8 48	4	17 18	4	18 37	Japanese	Toyo Kisen Kaisha	426.0	56.0	16.0	Newport	Yokohama	Ballast	7,731	7,051	5,245
Baron Incheupe	4	7 55	4	8 15	4	14 45	4	18 37	British	H. Hogarth & Sons	190.0	29.0	10.1	Cristobal	Ocean Island	Ballast	4,736	3,480	2,582
Balboa	4	14 00	5	6 22	5	17 45	5	20 05	American	Colombian Maritime Co.	359.9	48.3	12.0	Hamburg	Buenaventura	Ballast	11,420	8,385	5,914
Hilversum	4	6 45	5	7 35	5	14 29	5	15 20	Dutch	Finke & Co.	500.0	62.0	19.8	London	Portland	Ballast	4,327	5,914	4,399
Cardiganshire	5	5 42	5	8 35	5	15 43	5	16 30	British	Royal Mail Steam Packet Co.	410.0	51.0	16.6	New Orleans	Kobe	General	116	1,357	884
Chicago Maru	5	9 15	5	9 30	5	16 52	5	18 18	Japanese	Osaka Shosen Kaisha	385.0	51.0	16.6	Cristobal	Guayaquil	General	2,092	7,112	4,896
Portland Maru	5	9 15	5	9 30	5	16 52	5	18 18	Japanese	Kokusai Kisen Kaishiki Kaisha	216.0	35.0	12.2	New York	Los Angeles	General	6,044	4,235	2,921
Manavi	9	30 17	05	6 21	6	13 43	6	15 50	British	Pacific Steam Navigation Co.	408.0	54.0	20.6	Hull	San Francisco	Ballast	6,321	4,546	3,992
Ohosai	6	6 54	6	7 25	6	14 41	6	15 50	American	American-Hawaiian Line	400.0	53.0	15.0	Hull	Portland	Ballast	5,919	4,392	3,935
Anno Mendi	6	11 49	6	12 30	6	20 50	6	21 40	Spanish	Sota & Aznar Steamship Co.	421.0	54.0	17.0	Hull	Portland	Ballast	2,620	5,930	4,395
Scottish Monarch	6	18 50	7	6 20	7	13 32	7	14 32	British	Monarch Steamship Co., Ltd.	400.0	54.0	17.0	Hull	Portland	Ballast	5,930	4,277	3,992
Cape Town Maru	7	12 10	7	12 42	7	20 15	7	21 00	Japanese	Kawasaki Steamship Co.	385.0	51.0	27.4	Port Arthur	Yokohama	Kerosene oil	462	3,066	2,577
Junin	7	11 50	7	13 10	7	21 07	7	22 16	British	Pacific Steam Navigation Co.	332.0	50.0	21.6	Liverpool	Valparaiso	General	5,316	4,216	2,921
Algonia ³	9	28 20	50	8 6 05	8	16 21	8	17 10	American	United States Navy	150.0	24.0	16.0	Norfolk	San Francisco	General	5,930	4,277	3,992
Norman Monarch	7	15 01	8	6 25	8	13 58	8	15 20	British	Raeburn & Verel, Ltd.	401.0	52.0	17.0	Cardiff	Portland	Ballast	5,930	4,277	3,992
Uralian Maru	8	6 40	8	6 25	8	15 23	8	16 48	Japanese	Mitsui & Co.	400.0	53.0	13.0	Barry	Portland, Ore.	Ballast	462	3,066	2,577
Palena	8	14 47	8	10 06	8	16 47	8	17 43	Chilean	Chilean Steamship Line	350.0	42.0	23.8	Cristobal	Valparaiso	General	5,316	4,216	2,921
Caroline Maru	8	5 30	8	11 10	8	18 42	8	19 45	Japanese	Kawasaki Kisen K. Kaisha	345.0	48.0	25.3	New Orleans	Yokohama	General	5,930	4,277	3,992
Violette ⁴	8	9 00	8	9 05	8	11 50	8	12 50	American	C. A. Blair	400.0	54.0	17.0	Cristobal	Gatun	General	5,930	4,277	3,992

* Launch.

* Tug, towing barge No. 3.

* Tug.

* Motor ship.

THE PANAMA CANAL RECORD

Effingham.....	1	16	00	2	19	25	American.....	Williams, Dimond Co. (S. B.).....	402.6	54.8	27.2	San Francisco.	Glasgow.....	General.....	7,190	6,932	5,187
Imperial Maru.....	1	16	10	2	20	12	Japanese.....	Mitsui Bussan Co.....	385.0	51.0	26.0	Portland.....	Lisbon.....	Wheat.....	7,656	5,989	4,229
Bahian Maru.....	2	8	50	4	10	25	Peruvian.....	Colombian Maritime Co.....	390.0	29.0	11.4	Buenaventura.....	Cristobal.....	Coffee, hides.....	4,770	7,741	3,550
Uguali.....	2	10	00	2	18	10	American.....	Peruvian M. S. Co. (S. B.).....	374.0	40.0	19.0	Pisagua.....	Wilmington.....	General.....	1,744	4,465	2,405
Lake Floris.....	2	10	00	2	18	40	American.....	Pacific Mail Steamship Co.....	380.0	45.0	23.0	San Francisco.....	Baltimore.....	Nitrate.....	3,616	2,857	1,783
Ecuador.....	3	5	57	3	19	18	American.....	Grace Line, Inc.....	380.0	45.0	20.8	Talcahuano.....	New York.....	General.....	3,114	5,926	4,178
Santa Luisa.....	3	23	00	3	22	00	American.....	Kokoi Kisen Kaisha.....	300.2	51.0	20.8	Portland.....	United King.....	Wheat, in sacks.....	2,438	5,694	3,975
Hayre Maru.....	3	23	00	3	22	00	British.....	Kokoi Kisen Kaisha.....	300.2	51.0	20.8	Portland.....	United King.....	Wheat, in sacks.....	7,103	5,885	4,284
Saguma River.....	3	15	00	3	16	15	British.....	Hilder Bros.....	385.0	52.0	23.0	San Francisco.....	Stettin.....	Phosphate.....	6,850	5,237	3,837
Pelona.....	3	16	00	4	15	07	British.....	Chilian Line.....	385.0	52.0	21.6	San Francisco.....	Cristobal.....	General.....	9,955	3,066	2,577
Gothicstar.....	3	18	00	4	15	37	British.....	Blue Star Line.....	420.5	54.0	25.0	Shanghai.....	London.....	General.....	4,488	7,521	5,852
Winyah.....	3	18	40	4	15	37	British.....	Barber Lines (S. B.).....	400.7	54.2	25.0	Shanghai.....	New York.....	Sugar, general.....	7,900	6,329	4,786
Montgomery.....	4	8	15	4	18	05	American.....	United States Steel Products Co.....	404.2	56.2	23.0	Honolulu.....	Boston.....	Wheat.....	5,697	7,539	5,448
City.....	4	13	08	4	20	15	American.....	Lytle Shipping Co.....	495.0	52.0	23.0	Portland.....	New York.....	Sugar.....	7,200	5,650	4,071
Carra Ortega.....	5	11	50	5	16	00	British.....	Acacia-Hawaiian Line.....	407.5	53.0	28.0	Kahului, H. I.....	London.....	Barley.....	8,098	7,091	5,002
Iowan.....	4	13	50	5	15	25	American.....	MacBain, Blackwood & Laurie.....	385.3	52.0	22.0	San Francisco.....	New York.....	Navy stores.....	6,241	5,140	3,510
Crosshill.....	5	2	30	5	20	22	British.....	United States Government.....	435.0	61.0	22.9	San Francisco.....	New York.....	General.....	2,826	5,269	
Prova.....	5	5	00	5	17	05	American.....	Lockenbach Line.....	449.5	60.2	27.0	San Francisco.....	New York.....	General.....	7,500	9,262	6,853
Harry Luckenbach.....	5	12	00	5	20	20	American.....	Kokoi Kisen Kaisha.....	385.0	51.0	25.0	Portland.....	United King.....	Wheat.....	7,498	5,919	4,400
Chifuku Maru.....	9-20	14	00	5	21	36	Japanese.....	Nautal Steamship Co.....	380.3	49.7	23.0	Liquine.....	Liverpool.....	General.....	6,250	4,965	3,622
Elder Branch.....	5	15	05	6	16	07	British.....	Federal Steam Navigation Co.....	420.0	54.0	23.0	Wilmington.....	London.....	General.....	3,555	7,138	5,296
Durham.....	6	8	00	6	16	46	British.....	United States Navy.....	307.7	42.2	22.0	Balboa.....	Cristobal.....	General.....	775	3,429	2,206
Petuxent.....	4	13	45	6	9	25	American.....	Pacific Mail Steamship Co.....	233.7	43.2	22.0	San Francisco.....	Cristobal.....	General.....	1,948	2,915	2,001
Cuba.....	7	7	30	7	6	35	American.....	Sware & Hoyt (S. B.).....	233.7	43.2	18.2	Ancoorees.....	New Orleans.....	Frozen, general.....	5,560	9,159	6,853
Lake Hector.....	6	22	00	7	13	40	British.....	New Zealand Shipping Co.....	380.3	52.0	24.0	Lyttelton.....	London.....	Barley.....	7,000	5,328	4,159
Rimutaka.....	7	15	25	8	16	15	British.....	James Jenkins Sons, Ltd.....	380.0	50.2	22.0	San Francisco.....	Ipswich.....	Wheat.....	5,907	4,467	3,273
Anglesa.....	7	16	45	8	17	50	British.....	Boiron Steamship Co.....	301.0	46.2	20.0	Portland.....	United King.....	Wheat.....	2,480	4,742	3,023
Rubens.....	8	4	30	8	16	18	British.....	Pacific Steam Navigation Co.....	301.0	46.2	20.0	Guayaquil.....	New York.....	Wheat.....	8,895	6,823	5,186
Quilpe.....	8	4	30	8	16	18	British.....	Kokoi Kisen Kaibushiki Kaisha.....	425.0	53.5	27.6	Portland.....	London.....	Wheat.....			
Yone Maru.....	8	9	50	8	19	19	Japanese.....										

* For orders.

7 Cold storage and general.

* Canned goods, hay, wool, and general.

9 Wood—box shooks.

10 Ivory nuts, cocoa, coffee, etc.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
October 2.....	Metapan.....	Metapan.....	New Orleans.	October 2.....	Metapan.....	United Fruit Co.	Bocas del Toro.
October 3.....	Heredia.....	United Fruit Co.	Panama.	October 3.....	Caribbean.....	Panama Railroad	Cataguna.
October 3.....	Achilles.....	Panama Railroad Steamship Line.	Norfolk.	October 5.....	Allianca.....	Panama Railroad Steamship Line.	New York.
October 4.....	Ulua.....	United Fruit Co.	New York.	October 5.....	Metapan.....	United Fruit Co.	New Orleans.
October 4.....	Stuyvesant.....	Royal Netherlands W. I. Mail.	Amsterdam.	October 5.....	Ulua.....	United Fruit Co.	New York via Port Limon.

(Continued on page 144, column 2.)

Commercial Traffic Through the Panama Canal in September, 1921, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>United States coastwise:</i>							<i>Long tons.</i>
United States.....	25	111,460	134,239	167,068	110,439	\$136,340.58	72,620
<i>From Europe to west coast of United States:</i>							
British.....	9	32,708	39,104	51,024	32,642	30,224.77	280
Japanese.....	6	26,702	28,549	37,971	26,087	31,519.18	
Greek.....	1	3,317	3,382	3,507	2,091	4,058.40	
Danish.....	1	2,660	3,303	4,171	2,675	2,461.68	
Swedish.....	1	2,303	3,969	3,802	2,839	2,857.68	
Totals.....	18	67,690	78,307	100,475	66,334	71,121.71	280
<i>From United States to Far East:</i>							
United States.....	6	23,465	32,270	36,551	23,286	29,194.05	47,365
British.....	5	19,193	23,943	28,303	16,843	23,866.90	30,204
Japanese.....	4	15,028	17,548	23,042	14,381	18,604.15	28,366
Totals.....	15	57,686	73,761	85,896	54,510	71,665.10	105,935
<i>From Cristobal, C. Z., to west coast of South America:</i>							
British.....	5	1,975	2,412	3,519	2,115	2,468.75	563
Peruvian.....	3	4,225	8,296	13,764	7,190	5,281.25	604
Chilean.....	2	3,608	6,250	7,612	4,560	4,510.00	1,195
United States.....	2	672	700	1,230	744	504.00	
Totals.....	12	10,480	17,658	26,125	14,609	12,764.00	2,362
<i>From Europe to west coast of South America:</i>							
British.....	4	11,972	15,610	20,059	11,962	14,965.00	7,147
Italian.....	2	6,071	8,083	10,548	6,429	7,588.75	898
Dutch.....	2	3,667	5,755	5,702	3,710	4,583.75	1,702
French.....	1	3,631	4,166	5,818	3,712	4,538.75	118
German.....	1	1,783	2,924	2,990	1,757	2,228.75	2,500
Totals.....	10	27,124	36,538	45,117	27,570	33,905.00	12,365
<i>Foreign ships in ballast between United States coastwise ports:</i>							
Japanese.....	5	21,570	23,376	31,204	21,222	26,424.95	
Norwegian.....	2	5,961	8,341	9,462	5,888	7,451.25	
British.....	1	4,776	5,971	7,569	4,793	4,299.12	
Spanish.....	1	3,031	3,437	4,648	2,877	3,788.75	
Totals.....	9	35,338	41,125	52,883	34,780	41,964.07	
<i>From east coast of United States to west coast of South America:</i>							
British.....	4	13,962	16,939	20,733	12,404	14,336.50	4,115
United States.....	4	9,571	12,278	15,848	9,558	11,963.75	4,279
Norwegian.....	1	879	1,040	1,436	874	1,098.75	30
Totals.....	9	24,412	30,257	38,017	22,836	27,399.00	8,415
<i>From Europe to Australasia:</i>							
British.....	4	24,957	30,603	39,913	25,316	31,196.25	19,686
<i>From east coast of United States to Australasia:</i>							
British.....	3	13,378	14,193	16,339	10,234	14,744.88	10,400
United States.....	1	4,438	4,462	5,834	4,418	5,354.40	6,500
Totals.....	4	17,816	18,655	22,173	14,652	20,099.28	16,900
<i>From east coast of United States to west coast of Canada:</i>							
Dutch.....	1	4,217	4,763	6,869	4,211	3,429.36	
United States.....	1	3,151	4,225	4,621	2,866	3,938.75	1,750
British.....	1	2,813	3,938	4,304	2,804	3,516.25	3,024
Norwegian.....	1	851	1,138	1,650	819	819.36	
Totals.....	4	11,032	14,064	17,444	10,700	11,703.72	4,774
<i>From Europe to west coast of Canada:</i>							
Dutch.....	1	5,403	6,612	8,384	5,437	6,753.75	1,583
Danish.....	1	3,368	5,263	5,497	3,425	4,210.00	6,500
British.....	1	2,086	3,211	4,872	3,021	3,732.50	4,032
Totals.....	3	11,767	15,086	18,753	11,883	14,696.25	12,115
<i>From West India to west coast of United States:</i>							
British.....	1	3,143	4,365	5,197	3,155	3,142.80	
Spanish.....	1	2,232	2,792	3,460	2,021	2,010.24	
Totals.....	2	5,375	7,157	8,657	5,176	5,153.04	

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>From Cristobal, C. Z., to west coast of United States:</i>							<i>Long tons.</i>
United States.....	2	2,986	3,756	4,796	2,963	\$3,732.50	3,476
<i>From Cristobal, C. Z., to west coast of Central America:</i>							
British.....	2	1,429	1,624	2,731	1,463	1,786.25	854
<i>Colombian coastwise:</i>							
British.....	2	1,228	1,244	2,276	1,204	1,492.80	875
<i>From east coast of Mexico to Far East:</i>							
United States.....	1	6,551	6,481	8,366	6,309	7,777.20	10,000
<i>From east coast of United States to Balboa, C. Z.:</i>							
United States.....	1	5,972	7,008	11,081	5,970	7,465.00	12,038
<i>From east coast of Mexico to west coast of South America:</i>							
British.....	1	4,039	4,408	6,430	4,052	5,048.75	7,889
<i>From east coast of Canada to Aus- tralia:</i>							
British.....	1	3,490	4,051	5,384	3,311	4,362.50	6,280
<i>From east coast of South America to west coast of United States:</i>							
United States.....	1	3,034	4,174	4,748	2,925	3,792.50	3,856
United States.....	2	394	438	754	393	328.11	
Totals, September, 1921	128	434,250	530,634	669,087	427,395	513,793.61	300,720
Totals, August, 1921...	120	394,295	487,219	607,852	387,071	465,017.24	317,970
Totals, September, 1920	125	417,500	504,349	647,033	404,946	494,954.82	444,217

* Yachts; no cargo.

PACIFIC TO ATLANTIC.

<i>From west coast of United States to Europe:</i>							<i>Long tons.</i>
United States.....	9	36,187	45,750	56,386	36,158	\$45,233.75	68,021
Japanese.....	6	24,117	26,235	34,171	23,414	29,786.45	43,333
British.....	6	19,302	25,529	30,151	18,670	24,127.50	42,060
Norwegian.....	2	7,987	9,648	12,353	7,763	9,983.75	15,909
Danish.....	1	4,473	5,588	7,014	4,470	5,591.25	9,265
Totals.....	24	92,066	112,759	140,075	90,475	114,722.70	178,588
<i>United States coastwise:</i>							
United States.....	15	67,923	88,111	105,327	66,717	83,011.64	104,642
<i>From west coast of South America to Cristobal:</i>							
British.....	6	2,524	3,296	4,560	2,730	3,155.00	3,415
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	2,842
United States.....	2	672	700	1,230	744	840.00	1,182
Chilean.....	1	1,797	3,068	3,814	2,288	2,246.25	985
Totals.....	11	7,712	12,409	18,624	10,279	9,640.00	8,424
<i>From west coast of South America to Europe:</i>							
British.....	5	16,833	20,652	28,233	17,138	21,041.25	22,170
French.....	1	3,638	4,170	5,796	3,689	4,547.50	5,210
Italian.....	1	3,149	3,600	5,355	3,160	3,936.25	7,460
Norwegian.....	1	3,089	3,107	4,052	3,044	3,728.40	5,230
Dutch.....	1	2,518	2,707	3,375	2,574	3,147.50	4,500
Totals.....	9	29,227	34,236	46,811	29,605	36,400.90	44,570
<i>From west coast of South America to east coast of United States:</i>							
United States.....	5	13,993	17,147	21,945	14,069	17,491.25	18,276
British.....	2	6,649	9,171	12,172	7,139	8,311.25	2,657
Norwegian.....	1	879	1,040	1,436	874	1,098.75	1,046
Totals.....	8	21,521	27,358	35,553	22,082	26,901.25	21,979
<i>From west coast of Canada to Europe:</i>							
British.....	3	11,279	13,849	18,017	11,162	14,098.75	22,830
Dutch.....	1	4,474	6,911	7,310	4,495	5,592.50	8,834
United States.....	1	3,450	5,448	5,687	3,450	4,312.50	7,856
Swedish.....	1	3,430	5,533	5,554	4,225	4,287.50	8,193
Totals.....	6	22,633	31,741	36,568	23,332	28,291.25	47,713

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>From Australasia to Europe:</i>							<i>Long tons.</i>
British.....	4	22,767	26,084	33,326	22,367	\$28,316.00	20,192
<i>From Central America to Cristobal, C. Z.:</i>							
British.....	3	2,220	2,542	4,292	2,272	2,775.00	550
<i>From west coast of United States to east coast of Mexico:</i>							
United States.....	2	9,739	10,506	13,783	9,517	7,772.19	.....
<i>From west coast of South America to east coast of Mexico:</i>							
United States.....	1	4,203	5,041	6,703	4,203	3,629.52	.....
British.....	1	3,916	4,546	6,233	3,948	3,273.12	.....
Totals.....	2	8,119	9,587	12,936	8,151	6,902.64	.....
<i>From Far East to east coast of United States:</i>							
United States.....	1	2,722	3,877	4,390	2,714	3,402.50	6,501
Japanese.....	1	3,650	4,500	5,823	3,590	4,562.50	5,015
Totals.....	2	6,372	8,377	10,213	6,304	7,965.00	11,516
<i>From Balboa, C. Z., to east coast of United States:</i>							
United States.....	1	5,972	7,008	11,081	5,970	5,045.76	.....
<i>From Far East to east coast of Mexico:</i>							
Japanese.....	1	5,513	6,385	9,049	6,502	4,597.20	.....
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,522	4,914	5,652	3,522	4,402.50	5,530
<i>From west coast of Canada to east coast of United States:</i>							
United States.....	1	3,505	4,971	5,527	3,413	4,381.25	4,074
<i>From Australasia to east coast of United States:</i>							
United States.....	1	3,415	4,730	5,535	3,415	4,268.75	5,828
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	1	1,654	2,163	2,643	1,654	2,067.50	316
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	152
Totals, September, 1921	93	314,494	394,503	498,133	316,179	378,207.93	454,174
Totals, August, 1921...	116	398,147	478,057	611,965	393,874	490,363.54	521,303
Totals, September, 1920	131	415,242	504,436	646,437	412,864	515,195.81	565,340

Visit of the "Carnegie," Engaged in Magnetic Survey of Earth.

The yacht *Carnegie*, which is engaged in a magnetic survey of the earth being carried on by the Carnegie Institution of Washington, D. C., arrived at Balboa, October 7, from Apia, Samoa. She went into dry dock for renewal of her rudderpost, cleaning and painting. Upon completion of the work, about the end of this week, the *Carnegie* will transit the Canal and sail for Washington. She is in command of Capt. J. P. Ault, who is both master of the vessel and director of the scientific work.

This will be the third passage of the *Carnegie* through the Canal. She was first here in April, 1915, and again in May, 1918. The magnetic survey on which she is engaged was begun in 1904 by the *Galilee*; the *Carnegie* went into service in 1909. The present voyage of the *Carnegie* began in October, 1919, in Washington. Taking observations at intervals, the vessel proceeded across the Atlantic to Dakar, thence to Buenos Aires, St. Helena, Cape Town, across the Indian Ocean to Colombo, thence to Fremantle and Lyttelton, the Society Islands, San Francisco, Honolulu, Samoa, Rarotonga, and Balboa. The voyage covered, altogether, about 65,000 miles and was,

principally, for the purpose of filling in with observations in areas which had not been sufficiently covered before and recrossing the old lines for the purpose of determining changes in magnetic conditions.

The work of the *Carnegie*, as described in *The Canal Record* of April 14, 1915, is primarily to determine the magnetic declination of the compass at different points, the horizontal intensity and the dip of the magnetic field. The importance of keeping track of the magnetic declination and correcting charts accordingly is appreciated by mariners. A striking example of the extent to which the pointing of the compass may change is afforded by the records of declination in the city of London. In 1580 it was determined to be 11° to the east of true north and by 1812 it had changed to 24° west. The true north as determined in scientific observations is not the position of the North Star, which is usually about $1\frac{1}{2}^{\circ}$ off from true north, but is the hypothetical position in the firmament which represents the projection of the axis running through the north and south poles of the earth.

During this latest voyage the observers on the *Carnegie* encountered an interesting demonstration of the practical economic value of determining the magnetic declination. In Colombo they were called upon to testify in a land suit which hinged on the determination of a line run by the compass. The line was surveyed some years ago and recently the owner of one of the tracts divided by the line had it resurveyed, as a result of which it appeared that the line should have run considerably to one side of the accepted boundary. The man who had caused the new survey claimed additional territory. The owner of the territory contested that what had happened was that the declination of the compass had changed since the original line was run; that the old line was correct at the time made and had been acceptable to both parties to the contract and, accordingly, should stand. The observers on the *Carnegie* were called to testify in the court as to whether the compass had suffered a change in declination. Their observations showed that it had and the court decided that the original line should stand.

In navigating on the high seas, if the course is determined by the compass and the declination appearing on the chart should be as much as 3° off, which it frequently is, this could make a difference of about 30 miles a day and in 3 or 4 days a vessel might steer 90 or 100 miles off the course. It is said that if a vessel were to steer from the north Atlantic for Falmouth by the charts of a century ago her course would bring her, without the intervention of any other means of determining the situation, to the Orkney Islands in north Scotland.

In addition to the magnetic survey for practical purposes, the staff of the *Carnegie* makes observations which are of abstract scientific value. One is the measurement of the amount of electricity in the air, another the amount of radium in the air and in the sea water. The whole study, however, is in the field of terrestrial magnetism and the great object of the surveys is to determine as much as possible about the nature of magnetism and how its effects and changes can be measured and predicted; in other words, to obtain a measure of exactness with reference to terrestrial magnetism which might be comparable with present knowledge of industrial electricity or branches of chemistry.

While on the Isthmus the observers of the *Carnegie* will take observations from their station on the west shore of Limon Bay, opposite

Colon. This station was established in 1905 and on an average of once a year ever since some observer from the Carnegie Institution has made observations at this point.

Dr. Louis A. Bauer, the Director of the Department of Terrestrial Magnetism of the institution arrived on the Isthmus on October 11, to join the *Carnegie* and will be aboard her during the remainder of her voyage.

The *Carnegie*, as reported in *The Canal Record* of April 14, 1915, is a nonmagnetic vessel, being constructed and equipped with practically no iron or steel or other magnetic substance aboard her. She is a sailing vessel, equipped with a small auxiliary engine capable of making about 4 knots in a calm. The engine and the stove in the galley are of brass, the anchors of bronze, and in the building of the hull locust spikes were used. The vessel is 155½ feet long, over all, 128 feet 4 inches in length at the load water line, 33 feet in beam. The crew consists of 23, including 6 scientists. •

Since her previous visits to the Canal the *Carnegie* has been equipped with electric lights. The wiring and insulating material are of brass and other nonmagnetic material and the small generator, which is situated aft in the engine room, is always shut down while magnetic observations are being taken. The influence of the electrical equipment is nil.

In her voyage from Apia to Balboa, by way of Rarotonga, the *Carnegie* was 74 days at sea.

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 139. PORT OF CRISTOBAL—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
October 5.	Metapan	United Fruit Co.	Bocas del Toro.	October 5.	Stuyvesant.	Royal Netherlands W. I. Mail	Port Limon.
October 5.	Santa Marta.	United Fruit Co.	New York via Kingdon.	October 6.	Achilles	Panama Railroad Steamship Line	Norfolk.
October 6.	Sivola	United Fruit Co.	New York.	October 6.	Heredia.	United Fruit Co.	New Orleans via Bocas del
October 6.	Columbia	N. O. & S. A. S. Line	Cartagena.	October 6.			Toro.
October 7.	Stuyvesant.	Royal Netherlands W. I. Mail	Port Limon.	October 6.	Santa Marta.	United Fruit Co.	New Orleans via Colom-
October 7.	Owl.	United States Navy	Hampton Roads.	October 6.			bian ports.
October 8.	Caribbean	Panama Railroad Cattle Industry.	Cartagena.	October 6.	Sivola.	United Fruit Co.	New York via Kingdon.
October 8.	Tamar	Royal Mail Steam Packet Co.	London.	October 6.	Columbia	N. O. & S. A. S. Line	New Orleans.
October 8.	Santa Marta.	United Fruit Co.	Boston.	October 8.	San Bruno.	United Fruit Co.	Boston.
October 8.	Antillian	Leyland Line	Liverpool via wayports.	October 8.	Gen. G. W. Goethals.	Panama Railroad Steamship Line	New York via Haiti.
October 8.	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.	October 8.	Stuyvesant.	Royal Netherlands W. I. Mail	Puerto Colombia.
				PORT OF BAILEA.			
October 8.	Depere.	General Steamship Corp. (S. B.).	Valparaiso.	None.			

*Other than ships passing through the Canal.

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THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Volume XV. Balboa Heights, C. Z., October 19, 1921. No. 10.

Increasing Danger of Plague.—Steps to Prevent Spread.

THE PANAMA CANAL,

BALBOA HEIGHTS, C. Z., October 12, 1921.

To Owners, Masters, and Agents of vessels arriving at Panama Canal Zone ports, and all others concerned:

Bubonic plague is now prevalent in many of the seaports of the world. It is of the utmost importance to shipping interests that every possible measure be taken to prevent the spread of this disease to other ports and it is imperative that the Panama Canal, an international highway, continue free of plague.

To accomplish this, it is necessary to prevent the migration of rats by ships and to this end the Quarantine Regulations of The Panama Canal will be strictly enforced. Ready compliance with these regulations and hearty cooperation with the Quarantine Officers will react to the benefit of shipping interests, by the protection of the health of ships' companies and the prevention of expensive and vexatious quarantines, here and elsewhere. The regulations now in force are the minimum compatible with safety and as such must be obeyed in all particulars. Arriving vessels will observe the following regulations under penalty of being placed in quarantine and moved from the docks or fined, or both.

Metal rat guards not less than 3 feet in diameter will be applied to *all* mooring lines. They must be in good repair and must *fit* the lines *accurately*. They must *not* overhang or be nearer to the dock than 6 feet. Ships must be breasted off at least 6 feet. When exception is made to this rule on account of short cargo booms, the vessel will be immediately breasted off when not working.

Save-alls, catch-alls, hose, and all communications with the dock except gangways and properly rat-guarded lines, must be disconnected at night and when the ship is not working. Gangways must be raised at night or well lighted and guarded by a watchman.

Vessels should be fumigated frequently for the extermination of rats and other vermin aboard. All arriving vessels, except those not discharging cargo or passengers at Canal ports, which have not been satisfactorily fumigated within 3 months will be fumigated. Vessels habitually using Canal ports exclusively (tugs, dredges, barges, etc.) will be fumigated at least every 6 months.

Respectfully,

M. L. WALKER, *Acting Governor.*

Charges for Delivery on Radio Messages to Addresses in Colon and Cristobal.

Effective November 1, in addition to the regular station rate of 6 cents per word on messages received at the Colon radio station for addresses in Colon and Cristobal, there will be a further charge of 2 cents per word for the first 10 words and 1 cent for each word thereafter, to cover delivery. The present delivery service of the station will be discontinued, and messages will be delivered through the Panama National Telegraph system; the addition to the rate covers the charges of that organization.

Outgoing radio messages may be filed at the Panama National Telegraph office, and the same extra charges will be levied on them for transmission to the radio station. Messages may be filed at the radio station itself, in which case the regular station rate of 6 cents a word will apply. Messages may also be filed at any Panama Railroad telegraph office, under a charge of 20 cents for a message of 10 words or less, plus 1 cent for each word in excess of 10.

At the Balboa station the arrangement which is to be established for the Atlantic end has been in operation for some time.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, October 15, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Gen. O. H. Ernst	6	10 45	9	6 17	9	14 00	9	15 00	American	Panama Railroad Steamship Line	356.0	45.0	17.8	New York	Guayaquil	General	476	4,503	2,764
Salina	8	11 15	9	7 20	9	15 21	9	17 40	American	Pacific Mail Steamship Co.	419.0	56.0	28.6	Tampico	La Union	Oil	9,000	7,043	5,041
Madra	8	18 03	9	9 00	9	18 40	9	17 40	British	Shaw, Saville & Albion Co.	448.0	63.0	24.6	Cristobal	Auckland	Coal	5,506	11,026	7,912
Henry S. Grove	9	5 58	9	9 15	9	17 03	9	18 05	American	Atl. Gulf & Pac. S. S. Co.	404.0	54.0	21.0	Baltimore	Los Angeles	General	5,100	6,755	4,688
Raranga	9	10 33	9	11 00	9	18 32	9	19 48	British	Shaw, Saville & Albion Co.	466.0	63.0	25.0	London	Auckland	Iron rails, etc.	3,082	11,070	7,931
Mineola	9	6 00	9	12 25	9	19 10	9	20 10	American	W. R. Grace & Co.	298.0	40.0	17.8	New York	Buenaventura	General	1,669	2,835	1,822
Pacific Maru	9	20 13	10	6 25	10	14 20	11	19 37	Japanese	Kawasaki Kisen Kaisha	385.0	51.0	17.0	Norfolk	Grace Harbor	Ballast	6,251	4,736	
Victoria de Larrinaga	10	8 05	10	8 20	10	15 17	10	16 20	British	Miguel de Larrinaga S. S. Co.	405.0	52.0	17.1	Immingham	San Francisco	Ballast	5,956	4,570	
Marakana	10	9 15	10	9 30	10	17 02	10	23 39	British	Shaw, Saville & Albion Co.	477.0	63.0	27.0	Liverpool	Auckland	General	7,835	11,047	7,822
Ucayali	2	16 10	10	11 00	10	17 37	10	18 30	Peruvian	Peruvian Steamship Line	374.0	46.0	18.1	Cristobal	Callao	General	309	4,466	2,405
Yonan Maru	11	2 08	11	7 00	11	13 33	11	20 25	Japanese	Taiyo Kisen Kaisha	415.0	56.0	19.8	Newcastle	Portland	Ballast	7,212	5,289	
China Maru	11	3 15	11	7 40	11	15 09	11	17 52	Japanese	Kawasaki Kisen Kaisha	385.0	51.0	14.6	Cardiff	Tacoma	Ballast	5,924	4,395	
Barima	9-30	18 25	11	12 00	11	18 25	11	22 15	British	Pacific Steam Navigation Co.	220.0	37.0	12.0	Cristobal	Champerico	General	585	1,634	871
Cayuco 2220	10	11	9 00	11	10 00				Panaman.	Lawrence De Leon	360.0	52.0	21.0	Cristobal	Gatun Lake	General	1,670	5,937	4,325
Santa Elisa	11	15 04	12	6 05	12	13 56	12	17 12	American	W. R. Grace & Co.	81.0	25.0	16.0	New York	Payta	General	10	132	72
Laura C. Hall	10	16 25	12	6 10	12	14 03	13	8 40	British	Pacific Metals Corporation	382.0	52.0	16.0	Cristobal	Buenaventura	General	5,036	3,760	
Polykor	9	21 54	12	7 30	12	15 03	12	16 30	Greek	Dracolis Steamship Line	397.0	53.0	15.0	Newport, Eng.	Portland, Oreg.	Ballast	5,622	4,238	
Norwich City	11	17 05	12	8 55	12	15 33	12	21 18	British	W. R. Smith & Sons	370.0	53.0	17.1	Shields	Portland	Ballast	3,003	5,441	4,090
Salandia	11	17 05	12	10 05	12	17 33	13	0 15	Danish	East Asiatic Co.	400.0	53.0	16.6	Copenhagen	Valparaiso	Cement, general	5,771	4,047	
Ioloes	12	7 45	13	12 10	13	18 43	13	16 42	Greek	Hellenic Transport Co.	456.0	72.0	29.4	Port Tabot	N. Pac. coast	Ballast	1,443	3,439	2,206
Connecticut	12	7 45	13	7 52	13	14 50	13	17 40	American	United States Navy	308.0	42.0	20.7	Philadelphia	Los Angeles	General	4,686	6,314	4,642
Cuba	7	14 30	13	8 13	13	15 59	13	17 15	British	Pacific Mail Steamship Co.	410.0	52.0	24.9	Cristobal	San Francisco	General	1,443	3,439	2,206
City of Chester	12	16 08	13	8 13	13	15 59	13	17 15	British	Ellerman & Bucknell	410.0	52.0	24.9	New York	Auckland	General	4,686	6,314	4,642
Julia Luckenbach	12	16 59	13	8 51	13	16 35	13	17 50	American	Luckenbach Line	438.0	57.0	25.0	New York	San Francisco	General	4,682	8,543	6,427
Pennsylvania	13	6 40	13	9 30	13	17 31	13	18 30	American	American-Hawaitan Line	408.0	54.0	21.0	New York	Los Angeles	General	3,027	7,107	4,916
Katharine Park	13	7 00	13	10 42	13	18 23	14	6 36	British	Park Steamship Line	382.0	52.0	22.0	Newport	Portland	Ballast	6,247	4,872	
Henderson	13	8 22	13	11 00	13	19 16	15	10 29	American	United States Navy	432.0	63.0	23.0	New York	San Diego	General	645	7,228	2,956
Quilota	12	2 28	13	12 15	13	20 09	13	22 05	British	Pacific Steam Navigation Co.	361.0	46.0	17.6	New York	Guayaquil	General	728	4,708	2,956
Pleades	13	10 45	13	12 45	13	20 31	13	21 35	American	Luckenbach Line	332.0	47.0	22.0	New Orleans	San Francisco	General	3,717	4,147	3,259
Cayuco 2220	12		13	8 00	13	9 00			Panaman.	Lawrence De Leon				Cristobal	Gatun Lake	General			
Bernice G	13	20 22	14	6 26	14	14 09	15	13 30	Japanese	C. A. Blair	385.0	51.0	15.0	Cristobal	Gatun Lake	Ballast			
Oregon Maru	13	20 22	14	6 26	14	14 09	15	13 30	Japanese	Kabushiki K. Kaisha	385.0	51.0	15.0	Norfolk	Yokohama	Ballast		6,250	4,709

s Launch.

* U. S. N. T.

s Battleship.

* Motor ship.

* Motor schooner.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.																	
Wytheville.	23	21	25	14	9	8	01	9	15	13	14	17	05	14	18	10	American.
Munshine.	14	9	20	14	10	36	11	17	54	15	16	15	16	15	16	10	American.
Oak Branch.	14	16	58	15	6	10	15	14	16	13	15	13	15	13	15	10	British.
Liebre	15	6	05	15	7	55	13	15	13	15	13	15	13	15	18	18	American.
Decadon.	14	10	15	10	47	15	18	00	15	13	15	13	15	13	15	18	British.
Barber Line (S. B.)	396	0	55	0	25	0	32	0	60	3	32	0	445	8	376	0	Shanghai
New York News	370	0	55	0	27	0	25	0	50	0	25	0	380	5	380	5	Portland
San Diego	385	0	47	24	6	374	9	51	3	24	6	374	9	374	9	Portland	
Guayaquil	435	0	59	22	0	308	0	36	0	17	0	482	7	308	0	San Francisco	
Buenos Aires	443	0	52	0	28	0	28	0	81	0	25	0	427	5	427	5	Amapala
Yokohama.	6,320	6,973	4,917	6,320	6,973	4,917	6,320	6,973	4,917	6,320	6,973	4,917	6,320	6,973	4,917	6,320	New York
General.	12,500	9,335	6,874	12,500	9,335	6,874	12,500	9,335	6,874	12,500	9,335	6,874	12,500	9,335	6,874	12,500	Copenhagen
General.	6,193	5,098	3,600	6,193	5,098	3,600	6,193	5,098	3,600	6,193	5,098	3,600	6,193	5,098	3,600	6,193	Norfolk
General.	5,940	4,621	3,382	5,940	4,621	3,382	5,940	4,621	3,382	5,940	4,621	3,382	5,940	4,621	3,382	5,940	Queenstown.
General.	6,728	5,235	3,678	6,728	5,235	3,678	6,728	5,235	3,678	6,728	5,235	3,678	6,728	5,235	3,678	6,728	Hull
General.	10,000	8,898	6,334	10,000	8,898	6,334	10,000	8,898	6,334	10,000	8,898	6,334	10,000	8,898	6,334	10,000	Liverpool
General.	77	132	72	77	132	72	77	132	72	77	132	72	77	132	72	77	Cristobal
General.	6,400	5,967	4,917	6,400	5,967	4,917	6,400	5,967	4,917	6,400	5,967	4,917	6,400	5,967	4,917	6,400	New York
General.	3,800	3,199	2,250	3,800	3,199	2,250	3,800	3,199	2,250	3,800	3,199	2,250	3,800	3,199	2,250	3,800	Wilmington
General.	7,207	6,111	4,562	7,207	6,111	4,562	7,207	6,111	4,562	7,207	6,111	4,562	7,207	6,111	4,562	7,207	Baltimore
General.	516	1,187	622	516	1,187	622	516	1,187	622	516	1,187	622	516	1,187	622	516	Seattle
General.	3,141	2,096	1,511	3,141	2,096	1,511	3,141	2,096	1,511	3,141	2,096	1,511	3,141	2,096	1,511	3,141	Hamburg
General.	6,000	7,150	4,913	6,000	7,150	4,913	6,000	7,150	4,913	6,000	7,150	4,913	6,000	7,150	4,913	6,000	Pto. Colombia
General.	7,788	7,720	5,497	7,788	7,720	5,497	7,788	7,720	5,497	7,788	7,720	5,497	7,788	7,720	5,497	7,788	Tampico
General.	2,470	2,383	2,056	2,470	2,383	2,056	2,470	2,383	2,056	2,470	2,383	2,056	2,470	2,383	2,056	2,470	Santa Rosa
General.	3,837	7,068	5,303	3,837	7,068	5,303	3,837	7,068	5,303	3,837	7,068	5,303	3,837	7,068	5,303	3,837	Everett
General.	7,496	5,311	4,083	7,496	5,311	4,083	7,496	5,311	4,083	7,496	5,311	4,083	7,496	5,311	4,083	7,496	New York
General.	4,499	8,547	5,783	4,499	8,547	5,783	4,499	8,547	5,783	4,499	8,547	5,783	4,499	8,547	5,783	4,499	Yokohama.
General.	6,378	5,714	4,161	6,378	5,714	4,161	6,378	5,714	4,161	6,378	5,714	4,161	6,378	5,714	4,161	6,378	Portland
General.	5,700	4,714	3,468	5,700	4,714	3,468	5,700	4,714	3,468	5,700	4,714	3,468	5,700	4,714	3,468	5,700	Ilo
General.	7,729	6,080	4,618	7,729	6,080	4,618	7,729	6,080	4,618	7,729	6,080	4,618	7,729	6,080	4,618	7,729	San Francisco
General.	4,551	3,512	3,511	4,551	3,512	3,511	4,551	3,512	3,511	4,551	3,512	3,511	4,551	3,512	3,511	4,551	Talpat
General.	2,988	6,153	4,330	2,988	6,153	4,330	2,988	6,153	4,330	2,988	6,153	4,330	2,988	6,153	4,330	2,988	Valparaiso
General.	832	1,213	892	832	1,213	892	832	1,213	892	832	1,213	892	832	1,213	892	832	Valparaiso
General.	6,667	8,373	5,756	6,667	8,373	5,756	6,667	8,373	5,756	6,667	8,373	5,756	6,667	8,373	5,756	6,667	Tacoma
General.	7,590	6,579	4,887	7,590	6,579	4,887	7,590	6,579	4,887	7,590	6,579	4,887	7,590	6,579	4,887	7,590	Portland
General.	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	San Francisco
General.	582	741	350	582	741	350	582	741	350	582	741	350	582	741	350	582	Balboa
General.	8,245	6,460	4,735	8,245	6,460	4,735	8,245	6,460	4,735	8,245	6,460	4,735	8,245	6,460	4,735	8,245	San Diego
General.	5,104	3,447	2,542	5,104	3,447	2,542	5,104	3,447	2,542	5,104	3,447	2,542	5,104	3,447	2,542	5,104	New York
General.	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	Portland
General.	582	741	350	582	741	350	582	741	350	582	741	350	582	741	350	582	San Francisco
General.	8,245	6,460	4,735	8,245	6,460	4,735	8,245	6,460	4,735	8,245	6,460	4,735	8,245	6,460	4,735	8,245	Buenaventura
General.	5,104	3,447	2,542	5,104	3,447	2,542	5,104	3,447	2,542	5,104	3,447	2,542	5,104	3,447	2,542	5,104	Portland
General.	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	6,351	4,500	7,548	Valparaiso
General.	582	741	350	582	741	350	582	741	350	582	741	350	582	741	350	582	Valparaiso

Division

Submarine

8 For orders

ee, etc.

Barley, canned fruit, coffee,

11 Barley, flour, and general.

Continued on page 156, column 2.)

[illegible]

	574	574 1,027	287	574 1,027	64 28	534 287	2	20 223	2
Vegetables.									
Other.									
Cassia.									
Cement.							14	50	
Chemicals.									
Coffee.									
Cold storage:		975							
Beef.	557			557			557		
Butter.	405			405			405		
Cheese.	1,612			1,612			1,612		
Eggs.	29								
Lard.	177					29		177	
Mutton.	5,977			5,977			5,977		
Tallow.	1,506			847		679	827		
Other.	337			193		40	297		
Copra.	6,817			4,151		1,916	4,151	750	
Corn.	166			166			166		
Cotton, raw.	5,392					1,344	2,106	80	1,862
Cottontseed oil cake.	1,895					645	345	1,550	
Flour.	15,101					800	9,246	4,588	
Fruit:									127
Dried.	6,321			6,321		2,067	367	3,887	
Fresh.	343			343		363			
Glycerine.	128			128		128			
Gum, kauri.	70					40	30		
Hair.	16			16		16			
Hardwoods.	350			350			350		
Hats.	8								6
Hay.	1,131					2			
Hemp.	1,162			1,131		1,131			
Honey.	262			255		100	382	100	
Horns and hoofs.	40			40		4	4	40	3
Infusorial earth.	66								
Ink.	14			14		66			
Iodine.	19					14			
Ivory nuts.	3,164					19	9	10	
Jute.	5			3,164		1,143	265	300	1,456
Leather.	9					5	5		
Lime.	24					9			9
Liquors.	7								24
Lumber.	26,750			24,167		24,570	1,323	475	16
Manufactured goods:		16							366
Iron and steel.	85								
Machinery.	28			75			85		
Other.	443			23		3	5	38	3
Metals:				443			165		
Antimony.	303								
Copper.	9,445			5,190		303		2,400	1,446
Gold and silver.	3					5,599			
Lead.	14			2					
Tin.	634			14		84	275	275	14
Tungsten.	48			550		48			
Other.	69			48		69			69
Nitrate.	22,758			22,758		7,741	1,500	13,517	
	1,894			1,894			1,548	346	

COMMODITY STATISTICS.—PACIFIC TO ATLANTIC—Continued.
(Figures represent tons of 2,240 pounds.)

Commodity.	From—							To—					
	Hawaiian Islands.	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other European.	Cristobal, C. Z.	West Indies.	East coast of South America.
Total.													
Oil :													
Coconut								891	319				
Cottonseed								10					
Linseed				10				4,820					
Naphtha				4,820				11,091	7,257				
Refined								325					
Wood								2,506					
Onions													
Onyx											31		
Ores:													
Copper								3,305	25				
Gold and silver								1,032	53				
Magnesite								225					
Manganese								80					
Thi.								664	944				
Other								95			10		
Payants								44					
Per. chin								120					
Quinine								18			18		
Rice								6	45	1,749	6	4,686	
Rubber				4				719	4		15		
Rye								745	200				
Seed:													
Clover								285	285				
Cotton								1,918	1,918				
Hemp								90	65	25			
Other								54					
Skins and hides								54					
Sisal				526	28			738	278	376	196		
Sugar				30				609	30				
Syrup								4,232	425	2,000			
Talc								12					
Tea								40					
Tea								40					
Walrus								538					
Walrus								169					
Wheat				1,415				73,968	46,597	28,889			
Wool				2,696				2,605	2,920	19	69		
Wool				1,215				15,655	1,268	1,343	942		
General				3				7,233	1,268	1,343	942		
Totals													

NOTE.—These data are compiled from declarations of cargo and manifests submitted by the ships' masters, and, while incomplete, are indicative of the kind and quantity of the various commodities passing through Canal. From the cargo declarations submitted it was possible to classify 70 per cent of the cargo passing from the Atlantic to the Pacific, and 95 per cent of the cargo from the Pacific to Atlantic.

Supplement No. 4 to Tariff No. 5.—Coal.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., October 12, 1921.

ITEM 21.—COAL.

(Effective October 15, 1921.)

	Cristobal-Colon.	Balboa.
1. For steamships, including warships of all nations, delivered from coaling plants, per ton of 2,240 pounds, except as provided in paragraph 2.....	\$12.00	\$15.00
2. For vessels transiting the Canal that are directed by The Panama Canal to take coal at Balboa on account of the condition of the plants, the quantity available, or for the purpose of expediting transit.....		12.00
3. For steamships, including warships of all nations, when delivered from lighters in quantities of 50 tons or more, per ton of 2,240 pounds.....	13.00	16.00
4. For steamships, including warships of all nations, when delivered from lighters in quantities of less than 50 tons with minimum charge for 20 tons and with maximum charge not to exceed that for 50 tons at prices specified in paragraph 3, per ton of 2,240 pounds.....	15.00	18.00
5. When request is made by commander of vessel, chief engineer, or agent, for trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, an additional charge of 90 cents per ton will be made for extra handling.		
6. For lump coal for galley use, delivered in sacks, additional charge per ton, \$12. Should the vessel furnish satisfactory sacks, the charge will be only \$5 per ton additional. If delivery is made other than at the reloading side of the coaling plant, the extra cost of such special delivery will be charged in addition.		
7. For coal for cargo, delivered only by special authority of the Governor, per ton of 2,240 pounds.....	Prices quoted on application.	

M. L. WALKER,

Acting Governor, The Panama Canal.

Second Vice President, Panama Railroad Company.

Milk.

One hundred tons of powdered milk were shipped through the Canal in September from New York to Chilean and Peruvian ports. In the preceding month, 26 tons were shipped from the west coast of the United States to the Atlantic coast of the United States. From the beginning of the calendar year, 2,741 tons of dried or powdered milk have passed through the Canal from Pacific to Atlantic, but the 100 tons in August were the first declared from Atlantic to Pacific. Of the 2,741 tons from Pacific to Atlantic, 2,570 tons were from Australia and New Zealand for the United Kingdom, and 171 tons from the Pacific coast of the United States to the Atlantic coast of the United States.

Canned milk (condensed or evaporated) has been shipped through the Canal in considerable quantity from the beginning of its operation. In September 150 tons were shipped from the Atlantic coast of the United States to the Far East, and in the preceding portion of the calendar year the shipments from Atlantic to Pacific aggregated 723 tons. Of this quantity, 501 tons were from the United States to the Far East, 220 tons from the United States to the west coast of South America, and 2 tons were from Cristobal (transferred shipments) for the west coast of South America.

The traffic from Pacific to Atlantic in canned milk has been heavier than that in the opposite direction. In September it amounted to

2,701 tons, of which 2,695 tons were from the west coast of the United States and 6 tons from Canada. The 6 tons from Canada went to France and the American shipments were 800 tons from Seattle to the United Kingdom and 1,895 tons from several ports to the Atlantic coast of the United States, one shipment alone amounting to 875 tons. Previous shipments in the calendar year were made up of 344 tons from Australasia to the United Kingdom, 1,732 tons from the United States to the United Kingdom, and 1,666 tons in the United States coastwise trade, a total of 3,742 tons.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended October 15:

Survey vessel *Carnegie*, dock, stage, clean and paint bottom; make fresh water connection for circulating system on gasoline engine; perform necessary repairs to rudder; draw tail shaft; renew broken portion of tail shaft sleeve; launch *Wilson B. Gaither*, scrape and clean bottom; renew shoe; renew part of stem; renew bulwark and rail capping as necessary; overhaul Delco lighting plant and renew foundation of same; renew coupling to circulating water pump; house boat No. 179, dock, stage, and clean; scale and paint bottom to light load line; examine and repair hull and tanks as necessary; barges No. 106, dock, stage, and clean; scale and paint bottom to light load line; examine and repair hull and tanks as necessary; No. 107, dock, stage, and clean; scale and paint bottom to light load line; examine and repair hull and tanks as necessary; No. 108, dock, stage, and clean; scale and paint bottom to light load line; examine and repair hull and tanks as necessary.

The following vessels were at the Cristobal shops for repairs during the week ended October 17:

Steamship *Colon*, furnish 6 hatch bar bolts for No. 3 hatch with washer and nuts; renew 6 hatch bar bolts for No. 2 hatch with washer and nuts; make and fit 1 valve seat for fire pump; make and fit 1 valve seat for brine pump; make 3 valve stems for sanitary pump; repair automatic steam valve starboard feed pump; repair chain fall; fit heavier flanges on steam pipes to winches; launch *Gloriana*, repair deadwood, shaft log and keel, and renew as found necessary; remove copper on bottom; calk hull; test and reinstall copper; manufacture and install awning; repair monkey rail; repair sides of booby hatch; remove cylinders, piston, connecting rods, and flywheel from main engine; unship engine base from foundation; raise and block base up for shipwrights to work on keel; reinstall and assemble engine; straighten strut and install; straighten propeller and install; manufacture and install rudder and stock, etc.; steamship *Balboa*, renew lagging and jacket on boilers where necessary; manufacture and fit gooseneck on No. 4 cargo boom; repair 1 swivel and cargo hook, etc.; barge No. 122, dock and undock, clean and paint as directed; tug *La Boca*, straighten bulwarks, install new channel iron top rail; dredge *Marmot*, renew plates and woodwork in well as directed; repair angles and fenders; steamships *La Navarre*, *Honduras*, and *Herbert G. Wylie*, launch *Gargoyle*, motor ship *Selandia*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *Sciota*, repair anchor windlass; steamships *Cristobal*, install internal feed flanges in starboard boilers, etc.; *General W. C. Gorgas*, make repairs to Weir pump; make 2 iron hooks for gangway rest, etc.

Seismic Disturbance.

An earthquake shock of greater intensity than the usual seismic disturbances on the Isthmus occurred in the morning of October 17. The seismograph record at Balboa Heights showed that the movement began at 6.36.22 a. m. and ended at 6.40.30 a. m., lasting 4 minutes and 8 seconds. The maximum amplitude of displacement was 27 millimeters, and the intensity was estimated at III or IV on the Rossi-Forrel scale of I to X. The distance of the epicenter of disturbance was estimated at 70 miles from Balboa Heights, in a westerly direction. The shock was less violent than three or four of those which occurred in October, 1913.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending October 15, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Caribbean.	Panama Railroad Cattle Industry.	October 1.	October 1.	30	52
Bayano.	Elders & Fyffes, Ltd.	October 1.	October 1.	30	5
Canada.	Johnson Steamship Co.	October 1.	October 2.	37	(²)
Allianca.	Panama Railroad Steamship Line.	October 1.	October 5.	695	1,361
Ecuador.	Pacific Mail Steamship Co.	October 2.	October 3.	444	106
Sarpfos.	Caribbean Steamship Line.	October 2.	October 3.	104	(²)
Ucayali.	Peruvian Line.	October 2.	October 2.	1,744	
Balboa.	Colombian Maritime Co.	October 2.	October 4.	470	(²)
Santa Luisa.	W. R. Grace & Co.	October 3.	October 3.	30	(²)
Heredia.	United Fruit Co.	October 3.	October 6.	803	148
Achilles.	Panama Railroad Steamship Line.	October 3.	October 5.	11,999	(²)
Ulua.	United Fruit Co.	October 4.	October 5.	275	54
Palena.	Chilean Steamship Line.	October 4.	October 8.	1,014	476
Santa Marta.	United Fruit Co.	October 5.	October 6.	84	194
Metapan.	United Fruit Co.	October 5.	October 5.	3	12
Stuyvesant.	Royal Netherlands W. I. Mail.	October 5.	October 6.	46 ³ / ₂	
Sixaola.	United Fruit Co.	October 6.	October 6.	3	3 ¹ / ₂
Columbia.	New Orleans & S. A. S. S. Line.	October 6.	October 6.	125	12
Manavi.	Pacific Steam Navigation Co.	October 6.	October 6.		121
Stuyvesant.	Royal Netherlands W. I. Mail.	October 7.	October 8.	(²)	1,841
Gen. G. W. Goethals.	Panama Railroad Steamship Line.	October 7.	October 8.		2,245
Cuba.	Pacific Mail Steamship Co.	October 7.		766	
Quilpué.	Pacific Steam Navigation Co.	October 8.	October 8.	558	161
Tamar.	Pacific Steam Navigation Co.	October 8.		72	
San Bruno.	United Fruit Co.	October 8.	October 8.	8	19
Antillan.	Leyland Line.	October 8.		446	
Caribbean.	Panama Railroad Cattle Industry.	October 8.		800	
Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	October 8.		1,293	
Atenas.	United Fruit Co.	October 9.	October 9.	(²)	30
Quilpué.	Pacific Steam Navigation Co.	October 9.	October 9.	(²)	161
Cristobal.	Panama Railroad Steamship Line.	October 9.		9,617	
Caribbean.	Panama Railroad Cattle Industry.	October 9.	October 11.		217
Astronomer.	Harrison Line.	October 10.	October 11.	(²)	164
Antillan.	Leyland Line.	October 10.	October 12.		858
Laura C. Hall.	Pacific Metals Corporation.	October 10.	October 12.	77	9
Cartago.	United Fruit Co.	October 10.	October 12.	698	16
La Navarre.	French Line.	October 10.	October 14.	30	280
Selandia.	East Asiatic Co.	October 11.	October 12.	441	(²)
Tolosa.	United Fruit Co.	October 11.	October 12.	330	38
San Gil.	United Fruit Co.	October 11.	October 11.	8	(²)
Jamaica.	Pacific Steam Navigation Co.	October 11.	October 14.	486	3
Quillota.	Pacific Steam Navigation Co.	October 12.	October 13.	68	120
Urubamba.	Peruvian Steamship Line.	October 12.		2,373 ¹ / ₂	
Lyons Maru.	Nippon Yusen Kaisha.	October 12.	October 13.	245	(²)
Atenas.	United Fruit Co.	October 12.	October 12.	4	162
Salvador.	Pacific Steam Navigation Co.	October 14.	October 12.	852	
Honduras.	French Line.	October 14.		23	
Cuba.	Pacific Mail Steamship Co.		October 13.		1,615
Tamar.	Pacific Steam Navigation Co.		October 14.		870
Ebro.	Pacific Steam Navigation Co.	October 15.		90	
Helder.	Royal Netherlands W. I. Mail.	October 15.		230	
Balboa.	Colombian Maritime Co.	October 15.		582	
Coronado.	Elders & Fyffes, Ltd.	October 15.	October 15.	5	¹ / ₂

* No cargo discharged.

* No cargo laded.

* Pounds.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Two Weeks Ending October 15, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Palena.	Chilean Steamship Line.	October 3.	October 3.	3	
Cuba.	Pacific Mail Steamship Co.	October 6.	October 7.	87	1
Manavi.	Pacific Mail Steamship Co.	October 6.	October 6.		5
Depere.	United States Shipping Board.	October 8.	October 9.	725	
Quilpué.	Pacific Steam Navigation Co.	October 8.	October 8.	11	
Barima.	Pacific Steam Navigation Co.	October 11.	October 11.		2
Jamaica.	Pacific Steam Navigation Co.	October 11.	October 11.	1	
Laura C. Hall.	Pacific Metals Corporation.	October 12.	October 12.		6
Quillota.	Pacific Steam Navigation Co.	October 13.	October 13.		1
Cuba.	Pacific Mail Steamship Co.	October 13.	October 13.		1

Current Net Prices on Coal, Fuel Oil, and Beef.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

The following are current prices on fresh beef sold from the cold storage plant of the Canal. Prices quoted are United States currency, per pound net:

Beef hinds, 21 cents; beef fores, 13½ cents; beef ribs, entire set, 21 cents; short loins, 30 cents. This beef is from Colombian cattle slaughtered on the Isthmus.

Price of Commissary Supplies.

Coffee, Commissary Special, lb. \$0.23
Sugar, finest, highly refined, States' granulated:

25-lb. sack 1.75
5-lb. sack37
Lima beans, lb.09
Spinach, 10-lb. tin66
Apples, 10-lb. tin69
Sweet potatoes, 10-lb. tin78
Navy beans, lb.05
Roast beef, 6-lb. tin 1.90
Boiled beef, 6-lb. tin 1.50
Salad oil, 24-oz. bot.33

Beef, hind quarters, lb.21
Beef, fore quarters, lb. 1.13½
Square chuck with prime ribs, lb.16
Ribs, lb.21
Short loins, lb.30
Pork carcasses, lb.24
Lamb carcasses, lb.38
Mutton carcasses, lb.25
Veal carcasses, lb.34

Bananas, doz.06
Bananas, hand07
Coconuts, ea.04
Grapefruit, graded03, .05, .07
Oranges, select Costa Rican03, .04
Carrots, lb.06
Turnips, lb.06
Pickles, bulk, gal. 1.40
Soap, brown laundry, cake07
Tea, English Breakfast, lb.39
Soup, Campbell's, assorted, tin.13
Rice, lb.05
Jams, all flavors, 1-lb. tin.29
Peaches, 10-lb. tin. 1.40
Condensed milk, case (48) 7.20
Evaporated milk, case (48) 5.76
Ketchup, pint bottle30
Vinegar, cider, large bottle25

Bacon, States', lb.48
Ham, sugar cured, lb.39
Corned beef, lb.20
Standard mess pork, lb.24
Lard compound17
Oleomargarine, 5-lb. tin. 1.35
Yeast, lb.44
Pork sausage, lb.29

States' potatoes, graded to special specifications.05½
Lettuce, lb.08
Onions, lb.07½
Oranges, doz.30
Cabbage, lb.06

MOVEMENTS OF OCEAN VESSELS.—Continued from page 147.

PORT OF CRISTOBAL.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
October 9.	Atenas.	United Fruit Co.	October 9.	Atenas.	United Fruit Co.
October 9.	Cristobal.	Panama Railroad Steamship Line.	October 11.	Caribbean.	Panama Railroad Cattle Industry.
October 10.	Cartago.	United Fruit Co.	October 11.	San Gil.	Boston.
October 10.	La Navarre.	French Line.	October 11.	Cartago.	New York via Bocas del Toro and Limon.
October 11.	San Gil.	United Fruit Co.	October 12.	Atenas.	New Orleans.
October 11.	Tolosa.	United Fruit Co.	October 12.	Tolosa.	New York via Port Limon.
October 11.	United Fruit Co.	United Fruit Co.	October 12.	Antillan.	Mobile.
October 12.	Atenas.	United Fruit Co.	October 12.	La Navarre.	French Line.
October 12.	Coronado.	Elders & Fyffes, Ltd.	October 14.	Tamar.	Royal Mail Steam Packet Co.
October 15.	Coronado.	Elders & Fyffes, Ltd.	October 15.	Coronado.	Elders & Fyffes, Ltd.
October 15.	Coronado.	Elders & Fyffes, Ltd.	October 15.	Owl.	United States Navy.
PORT OF BALBOA.			PORT OF CRISTOBAL.		
None.			October 9.	Depere.	General Steamship Corp. (S. B.)
					San Francisco.

*Other than ships passing through the Canal.

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CANAL WORK IN SEPTEMBER.

The following is the report of the Acting Governor to the Secretary of War, of Canal work in the month of September, 1921:

BALBOA HEIGHTS, C. Z., October 20, 1921.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of September, 1921.

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal, as compared with the preceding month and with the corresponding month of last year, was as follows:

	September, 1921.	August, 1921.	September, 1920.
Commercial vessels.....	221	236	256
United States Government vessels.....	37	31	12
Launches, etc. (under 10 tons).....	2	7	6
Total vessels and craft through Canal.....	260	274	274

COMMERCIAL TRAFFIC.¹

Commercial traffic through the Panama Canal during the month of September, 1921, fell slightly below that of the preceding month, but exceeded that for the months of May, June, and July, 1921.

Commercial vessels passing from the Atlantic to the Pacific numbered 128, and in point of tonnage not only exceeded the September traffic of last year, but with the exception of the months of December, 1920, and March, 1921, is the greatest Atlantic-Pacific traffic since the opening of the Canal.

Analyzing this traffic, and comparing it with the corresponding month of last year, and with the average month for the fiscal year ending June 30, 1921, we have the following:

	September, 1921.	September, 1920.	Average month for fiscal year 1921.
Origin of vessels passing from Atlantic to Pacific:			
From east coast of United States.....	67	54	61
From Europe.....	35	38	27
From Cristobal, C. Z.....	16	18	17
From east coast of Mexico.....	2	11	9
Miscellaneous.....	8	4	9
Total vessels, Atlantic to Pacific.....	128	125	123
Tonnage of above vessels, Panama Canal net measurement:			
From east coast of United States.....	319,109	224,955	260,792
From Europe.....	160,534	181,980	122,536
From Cristobal, C. Z.....	23,038	27,247	24,392
From east coast of Mexico.....	10,889	58,879	43,876
Miscellaneous.....	17,064	11,288	26,813
Total Panama Canal net tonnage.....	530,634	504,349	478,409

¹ Commercial traffic includes all vessels of 10 tons or more transiting the Panama Canal, with the exception of vessels owned by the United States Government, or chartered by the Government to carry Government supplies.

	September, 1921.	September, 1920.	Average month for fiscal year 1921.
Destination of vessels passing from the Atlantic to the Pacific:			
To west coast of United States and Canada.....	64	36	28
To west coast of South America.....	34	58	52
To the Far East.....	16	16	16
To Australasia.....	9	9	14
Miscellaneous.....	5	6	13
Total vessels, Atlantic to Pacific.....	128	125	123
Tonnage of above vessels, Panama Canal net measurement:			
To west coast of United States and Canada.....	297,908	153,047	124,060
To west coast of South America.....	90,105	192,223	165,618
To the Far East.....	80,242	77,545	76,310
To Australasia.....	53,309	64,237	80,551
Miscellaneous.....	9,070	17,297	31,870
Total Panama Canal net tonnage, Atlantic to Pacific.....	530,634	504,349	478,409

Commercial traffic from the Pacific to the Atlantic, with the exception of June, 1921, was the lowest in point of tonnage since June, 1920. Analyzing this traffic, and comparing it with the corresponding month of last year, and with the average month for the fiscal year ending June 30, 1921, we have the following:

	September, 1921.	September, 1920.	Average month for fiscal year 1921.
Origin of vessels passing from the Pacific to the Atlantic:			
From west coast of United States and Canada.....	50	34	32
From west coast of South America.....	31	66	56
From Australasia.....	5	11	11
From Far East.....	3	12	6
Miscellaneous.....	4	7	13
Total vessels, Pacific to Atlantic.....	93	130	118
Tonnage of above vessels, Panama Canal net measurement:			
From west coast of United States and Canada.....	255,165	139,001	148,322
From west coast of South America.....	84,212	210,222	187,547
From Australasia.....	30,814	74,854	71,484
From Far East.....	14,762	65,126	29,325
Miscellaneous.....	9,550	15,233	36,236
Total Panama Canal net tonnage, Pacific to Atlantic.....	394,503	504,436	472,914
Destination of vessels passing from Pacific to Atlantic:			
To Europe.....	43	32	38
To east coast of United States.....	28	57	42
To Cristobal, C. Z.....	15	21	18
To east coast of Mexico.....	5	9	10
Miscellaneous.....	2	11	10
Total vessels, Pacific to Atlantic.....	93	130	118
Tonnage of above vessels, Panama Canal net measurement:			
To Europe.....	204,820	161,840	168,410
To east coast of United States.....	140,555	239,065	194,169
To Cristobal, C. Z.....	17,114	36,594	25,433
To east coast of Mexico.....	26,478	44,536	54,367
Miscellaneous.....	5,536	22,401	30,535
Total Panama Canal net tonnage, Pacific to Atlantic.....	394,503	504,436	472,914

It will be seen from the above analysis that traffic both to and from the west coast of the United States and Canada was much greater than for the corresponding month of last year, or of the average month for the past fiscal year. This increase shows both in the United States coastwise and in the West Coast-European traffic. Heavy shipments of grain, together with canned goods and lumber, made up the bulk of the cargoes from the west coast.

Traffic to and from the west coast of South America totaled only about half the normal tonnage as represented by the average month for the past fiscal year. This is due to a number of causes, chief of which is the continued stagnation in the nitrate trade, and the almost complete stoppage of oil shipments from Mexico.

The Australasian traffic also shows a decrease, particularly in the Pacific to the Atlantic traffic, which was less than half the tonnage for the average month during the past fiscal year. Traffic from the Far East also fell below the normal tonnage,

while the traffic to and from the east coast of Mexico was greatly curtailed due to the unsettled conditions in the Mexican oil fields.

A further comparison of the commercial traffic for September, 1921, with that of the preceding month, of the corresponding month of 1920, and of the average month's traffic for the past 12 months, shows the following.

	September, 1921.	August, 1921.	September, 1920.	Average month for past year.
United States equivalent net tonnage.....	748,744	792,442	832,742	768,058
Panama Canal net tonnage.....	925,137	965,276	1,008,785	941,664
Registered gross tonnage.....	1,167,220	1,219,817	1,293,470	1,193,436
Registered net tonnage.....	743,574	780,945	817,810	760,252
Tolls earned.....	\$892,001.54	\$955,380.78	\$1,010,150.63	\$928,341.93
Tons of cargo carried.....	754,894	839,273	1,009,557	913,771

Ocean-going commercial vessels passing through the Canal averaged 7.4 ships per day. The average tonnage, tolls, and tons of cargo carried, per commercial vessel, as compared with last month's traffic, and with September, 1920, were as follows:

	September, 1921.	August, 1921.	September, 1920.
United States equivalent net tonnage.....	3,388	3,358	3,265
Panama Canal net tonnage.....	4,186	4,090	3,956
Registered gross tonnage.....	5,282	5,169	5,072
Registered net tonnage.....	3,365	3,309	3,207
Tolls.....	\$4,036.21	\$4,048.22	\$3,945.96
Tons of cargo (all vessels).....	3,416	3,556	3,944
Tons of cargo (laden vessels only).....	4,289	4,217	4,853

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

While all cargo-carrying vessels pay tolls on their net tonnage, as determined by established rules for measuring their available cargo-carrying space, yet the rate of such tolls per cargo ton furnishes interesting data, varying as it does not only in different ships, but in vessels of different nationalities.

The average rate of tolls paid on each ton (2,240 pounds) of cargo passing through the Panama Canal from the Atlantic to the Pacific was \$1.23, and from the Pacific to the Atlantic, \$0.77 per ton, with a general average of \$0.95 per ton. The average rate paid per cargo ton, by nationality of vessels, is shown in the following statement:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.14	\$0.90	\$1.01
Chilean.....	3.77	2.50	3.10
Danish.....	.64	.60	.62
Dutch.....	3.45	.65	1.21
French.....	38.46	.87	1.74
German.....	.89	.....	.89
Italian.....	8.45	.53	1.38
Japanese.....	.65	.71	.69
Norwegian.....	36.62	.67	.72
Peruvian.....	8.74	1.20	2.52
Swedish.....	.....	.52	.52
United States.....	1.25	.75	.96
Average rate, all ships, September, 1921.....	1.23	.77	.95
Average rate, all ships, August, 1921.....	1.18	.88	.99
Average rate, all ships, July, 1921.....	1.44	.83	1.05

The rate of tolls per cargo ton paid by vessels transiting the Canal in September, 1921, varied from \$38.46 per ton paid by the steamship *Saint Louis*, French registry, bound from Havre to Talcahuano, and carrying 118 tons of cargo, on which tolls of \$4,538.75 were assessed; to 44.7 cents per cargo ton, paid by the steamer *Willhilo*, United States registry, bound from Seattle to New York, and carrying 9,971 tons of general merchandise, on which tolls of \$4,458.75 were collected.

The variation in the rate of tolls paid per cargo ton by different vessels, and by vessels of various nationalities, is due to some vessels being but lightly loaded while others are carrying capacity cargoes. This also explains the variation in the rates per cargo ton between northbound and southbound ships of the same nationality.

COMMODITY STATISTICS.

A classification of all cargo passing through the Canal during the month of September, 1921, by commodities, giving the origin and destination of same, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of October 19, 1921. These statistics are compiled from declarations of cargo submitted by the ships' masters, and while incomplete, are indicative of the kind and quantity of commodities passing through the Canal. From the cargo declarations and manifests submitted, it was possible to classify 70 per cent of the September, 1921, cargo passing from the Atlantic to the Pacific, and 95 per cent from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith:

CARGO PASSING FROM ATLANTIC TO PACIFIC.

	Cargo tons.		Per cent of total cargo.	
	September.	August.	September.	August.
Manufactured goods:				
Iron and steel	50,488	28,373	23.2	11.5
Machinery	6,641	3,695		
Railroad material	9,391	2,796		
Other	3,299	1,821		
Oil:				
Crude	17,981	36,454	13.3	21.2
Refined	19,781	28,685		
Other	2,088	2,117		
Cotton, raw	19,207	34,482	6.4	10.8
Coal	16,040	24,066	5.3	7.6
Sulphur	11,551	19,350	3.8	6.1
Metals (copper, 1,845 tons; iron, 6,139 tons)	8,467	5,286	2.8	1.7
Phosphates	5,888	13	2.0	
Ammonia	4,749	6,997	1.6	2.2
Rosin	2,764	2,431	0.9	0.8
Coffee	2,746	1,180	0.9	0.4
Glass and glassware	2,645	593	0.9	0.2
Tobacco	2,452	893	0.8	0.3
Canned goods	2,252	3,171	0.8	1.0
Wax, paraffin	2,150	820	0.7	0.3
Sugar	2,000	7,145	0.7	2.3
Other and general	108,140	107,602	35.9	33.6
Total cargo	300,720	317,970	100.0	100.0

CARGO PASSING FROM PACIFIC TO ATLANTIC.

Barley	107,831	77,661	23.7	14.9
Wheat	75,486	80,231	16.6	15.4
Canned goods:				
Fish	17,232	7,972	12.5	4.2
Fruit	35,427	10,921		
Other	4,302	2,875		
Lumber	26,750	35,054	5.9	6.7
Nitrate	22,758	39,349	5.0	7.5
Oils:				
Refined	18,278		5.4	0.5
Naphtha	4,820			
Other	1,545	2,935		
Flour	15,101	18,946	3.3	3.6
Cold storage:				
Mutton	5,977	20,367	2.3	6.1
Other	4,623	11,291		
Metals:				
Copper	9,445	17,341	2.3	4.2
Other	1,071	4,084		
Rice	7,205	5,033	1.6	1.0
Copra	6,817	3,115	1.5	0.6
Beans, peas, lentils	6,774	5,571	1.5	1.1
Sugar	6,667	49,406	1.5	9.5
Fruit (dried, 6,321 tons)	6,664	5,192	1.5	1.0
Ores (copper, 3,330 tons)	6,433	6,523	1.4	1.3
Coffee	6,013	6,710	1.3	1.3
Wool	5,522	10,468	1.2	2.0
Cotton, raw	5,392	4,140	1.2	0.8
Cacao	4,327	1,469	1.0	0.3
Ivory nuts	3,164	1,492	0.7	0.3
General and other	38,550	93,157	8.6	17.7
Total cargo	454,174	521,303	100.0	100.0

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UNITED STATES COASTWISE TRAFFIC.

The number of vessels engaged in the United States coastwise traffic, passing through the Panama Canal during September, 1921, together with their tonnage, tolls, and tons of cargo carried, as compared with the preceding months of the calendar year, was as follows: (See traffic by trade routes also.)

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.20	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642

See also distribution of cargo tables on pages 178 and 179.

UNITED STATES SHIPPING BOARD VESSELS.

The number of vessels under control of the United States Shipping Board passing through the Panama Canal during the month of September, 1921, together with their Panama Canal net tonnage, tolls, and tons of cargo carried, as compared with preceding months of the calendar year, was as follows:

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,619

TRAFFIC BY TRADE ROUTES.

A detailed statement of the September traffic by trade routes has previously been compiled, and was published in THE PANAMA CANAL RECORD under date of October 12, 1921. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes. Traffic for the preceding month and for the corresponding month of last year is also shown, which affords a ready comparison of traffic over the leading trade routes:

ATLANTIC TO PACIFIC.

	September, 1921.	August, 1921.	September, 1920.
<i>Number of vessels.</i>			
United States coastwise.....	25	19	12
Europe to west coast of United States.....	18	17	14
East coast of United States to Far East.....	15	18	15
Cristobal to west coast of South America.....	12	12	14
Europe to west coast of South America.....	10	11	17
Foreign ships in ballast between United States coastwise ports.....	9	2	.....
East coast of United States to west coast of South America.....	9	11	18
Europe to Australasia.....	4	6	5
East coast of United States to Australasia.....	4	5	3
East coast of United States to west coast of Canada.....	4	1	2
Europe to west coast of Canada.....	3	3	2
West Indies to west coast of United States.....	2	.....	.....
Cristobal to west coast of United States.....	2	1	3
Cristobal to west coast of Central America.....	2	2	1
East coast of United States to Balboa, C. Z.....	1	4	3
East coast of Mexico to west coast of South America.....	1	2	9
Miscellaneous.....	7	6	7
Totals.....	128	120	125

ATLANTIC TO PACIFIC—continued.

	September, 1921.	August, 1921.	September, 1920.
<i>Panama Canal net tonnage.</i>			
United States coastwise	134,239	86,278	44,651
Europe to west coast of United States	78,307	68,334	72,944
East coast of United States to Far East	73,761	90,256	73,733
Foreign ships in ballast between United States coastwise ports	41,125	7,759	
Europe to west coast of South America	36,538	47,902	60,300
Europe to Australasia	30,603	42,837	37,671
East coast of United States to west coast of South America	30,257	31,053	64,415
East coast of United States to Australasia	18,655	27,714	21,257
Cristobal to west coast of South America	17,658	17,372	21,408
Europe to west coast of Canada	15,086	16,695	11,065
East coast of United States to west coast of Canada	14,064	4,735	6,518
West Indies to west coast of United States	7,157		
East coast of United States to Balboa, C. Z.	7,008	17,564	10,569
East coast of Mexico to west coast of South America	4,408	9,587	46,100
Cristobal to west coast of United States	3,756	2,206	5,654
Cristobal to west coast of Central America	1,624	1,624	185
Miscellaneous	16,388	15,303	27,879
Totals	530,634	487,219	504,349
<i>Tons of cargo carried.</i>			
United States coastwise	72,620	55,387	50,450
United States to Far East	105,935	112,454	96,281
East coast of United States to Australasia	16,900	31,150	25,819
Europe to Australasia	19,686	16,266	35,768
Europe to west coast of South America	12,365	23,500	21,065
Europe to west coast of Canada	12,115	8,828	20
East coast of United States to Balboa, C. Z.	12,038	19,114	12,025
East coast of United States to west coast of South America	8,415	10,949	61,404
East coast of Mexico to west coast of South America	7,889	17,718	70,481
East coast of United States to west coast of Canada	4,774	2	10,933
Cristobal to west coast of United States	3,476	1,560	8,331
Cristobal to west coast of South America	2,362	3,443	10,551
Cristobal to west coast of Central America	854	1,128	
Europe to west coast of United States	280	684	7,450
Miscellaneous	21,011	15,787	33,639
Totals	300,720	317,970	444,217

PACIFIC TO ATLANTIC.

<i>Number of vessels.</i>			
West coast of United States to Europe	24	23	8
United States coastwise	15	23	13
West coast of South America to Cristobal	11	11	16
West coast of South America to Europe	9	10	13
West coast of South America to east coast of United States	8	13	26
West coast of Canada to Europe	6	2	4
Australasia to Europe	4	11	6
Central America to Cristobal	3	2	1
West coast of South America to east coast of Mexico	2	1	6
West coast of United States to east coast of Mexico	2	1	2
Far East to east coast of United States	2	4	11
Balboa, C. Z., to east coast of United States	1	1	
West coast of Canada to east coast of United States	1	2	1
Australasia to east coast of United States	1	2	5
West coast of United States to Cristobal	1	2	4
Miscellaneous	3	8	15
Totals	93	116	131
<i>Panama Canal net tonnage.</i>			
West coast of United States to Europe	112,759	109,893	38,893
United States coastwise	88,111	110,899	52,759
West coast of South America to Europe	34,236	45,656	58,859
West coast of South America to east coast of United States	27,358	42,871	82,427
West coast of Canada to Europe	31,741	12,134	17,215
Australasia to Europe	26,084	64,147	41,555
West coast of South America to Cristobal	12,409	16,825	28,592
West coast of United States to east coast of Mexico	10,506	5,035	10,654
West coast of South America to east coast of Mexico	9,587	4,274	27,357
Far East to east coast of United States	8,377	20,622	59,808
Balboa, C. Z., to east coast of United States	7,008	8,063	
West coast of Canada to east coast of United States	4,971	7,304	5,448
Australasia to east coast of United States	4,730	4,514	33,299
West coast of Central America to Cristobal	2,542	1,398	185
West coast of United States to Cristobal	2,163	3,799	7,817
Miscellaneous	11,921	20,623	39,568
Totals	394,503	478,057	504,436

PACIFIC TO ATLANTIC—continued.

	September, 1921.	August, 1921.	September, 1920.
<i>Tons of cargo carried.</i>			
West coast of United States to Europe.....	178,588	174,198	51,363
United States coastwise.....	104,642	129,792	71,672
West coast of Canada to Europe.....	47,713	17,702	26,882
West coast of South America to Europe.....	44,570	45,625	63,433
West coast of South America to east coast of United States.....	21,979	47,717	121,503
Australasia to Europe.....	20,192	54,877	41,327
Far East to east coast of United States.....	11,516	29,308	86,212
West coast of South America to Cristobal.....	8,424	8,490	20,741
Australasia to east coast of United States.....	5,828	1,585	28,096
West coast of Central America to Cristobal.....	650	1,195	285
West coast of United States to Cristobal.....	316	2,473	2,046
Miscellaneous.....	9,756	8,341	51,780
Totals.....	454,174	521,303	565,340

LATIN-AMERICAN TRAFFIC.

In point of net tonnage, the Latin-American traffic for September, 1921, fell below that for August, and was but little more than half that for the corresponding month of last year. In cargo tons the decrease was even more marked, and the September traffic was approximately only a third of the cargo tonnage for September, 1920. The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality:

ATLANTIC TO PACIFIC.

Nationality.	No. of vessels	TONNAGE.				Tolls.	Cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
British.....	19	37,748	46,602	60,945	36,355	\$43,240.85	21,443
United States.....	11	28,786	34,397	46,069	28,469	35,234.95	33,640
Peruvian.....	3	4,225	8,296	13,764	7,190	5,281.25	604
Italian.....	2	6,071	8,083	10,548	6,429	7,588.75	898
Dutch.....	2	3,667	5,755	5,702	3,710	4,583.75	1,702
Chilean.....	2	3,608	6,250	7,612	4,560	4,510.00	1,195
French.....	1	3,631	4,166	5,818	3,712	4,538.75	118
Spanish.....	1	2,232	2,792	3,460	2,021	2,010.24	.....
German.....	1	1,783	2,924	2,990	1,754	2,228.75	2,500
Norwegian.....	1	879	1,040	1,436	874	1,098.75	30
September, 1921.....	43	92,630	120,305	158,344	95,074	110,316.04	62,130
August, 1921.....	48	110,623	142,593	184,947	114,033	137,723.62	93,199
September, 1920.....	66	.....	219,045	292,299	177,179	.....	176,578

PACIFIC TO ATLANTIC.

Nationality.....	No. of vessels	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
British.....	18	32,756	40,829	56,628	33,829	\$39,302.02	29,044
United States.....	13	39,755	47,479	63,037	39,679	41,248.72	25,304
Norwegian.....	2	3,968	4,147	5,488	3,918	4,827.15	6,276
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	2,842
Japanese.....	1	5,513	6,385	9,049	6,502	4,597.20	.....
French.....	1	3,638	4,170	5,796	3,689	4,547.50	5,210
Italian.....	1	3,149	3,600	5,355	3,160	3,936.25	7,460
Dutch.....	1	2,518	2,707	3,375	2,574	3,147.50	4,500
Chilean.....	1	1,797	3,068	3,814	2,288	2,246.25	985
September, 1921.....	40	95,813	117,730	161,562	100,156	107,251.34	81,621
August, 1921.....	46	116,107	146,490	192,066	118,531	131,986.74	106,174
September, 1920.....	73	.....	225,095	293,529	182,332	.....	235,308

CLASSIFICATION OF COMMERCIAL TRAFFIC.¹

A statement of this month's commercial traffic, classified (1) according to the nationality of the various ships passing through the Panama Canal, and (2) segregating laden and unladen vessels, is shown in the following tabulations:

¹ Commercial traffic includes all ocean-going vessels transiting the Panama Canal, excepting vessels owned or chartered by the United States Government.

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Number and nationality of commercial vessels passing through the Canal:			
British.....	44	31	75
Chilean.....	2	1	3
Danish.....	2	1	3
Dutch.....	4	2	6
French.....	1	1	2
German.....	1		1
Greek.....	1		1
Italian.....	2		2
Japanese.....	15	1	16
Norwegian.....	4	8	12
Peruvian.....	3	4	7
Spanish.....	2	2	4
Swedish.....	1		1
United States.....	46	41	87
Totals, September, 1921.....	128	93	221
Totals, August, 1921.....	120	116	236
Totals, September, 1920.....	125	131	256
United States equivalent net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	142,049	86,104	228,153
Chilean.....	3,608	1,797	5,405
Danish.....	6,028	4,473	10,501
Dutch.....	13,287	6,992	20,279
French.....	3,631	3,638	7,269
German.....	1,783		1,783
Greek.....	3,317		3,317
Italian.....	6,071	3,149	9,220
Japanese.....	63,300	33,280	96,580
Norwegian.....	7,691	11,955	19,646
Peruvian.....	4,225	2,719	6,944
Spanish.....	5,263		5,263
Swedish.....	2,303	3,430	5,733
United States.....	171,694	156,957	328,651
Totals, September, 1921.....	434,250	314,494	748,744
Totals, August, 1921.....	394,295	398,147	792,442
Totals, September, 1920.....	417,500	415,242	832,742
Panama Canal net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	171,616	106,291	277,907
Chilean.....	6,250	3,068	9,318
Danish.....	8,566	5,588	14,154
Dutch.....	17,130	9,618	26,748
French.....	4,166	4,170	8,336
German.....	2,924		2,924
Greek.....	3,382		3,382
Italian.....	8,083	3,600	11,683
Japanese.....	69,473	37,120	106,593
Norwegian.....	10,519	13,795	24,314
Peruvian.....	8,296	5,345	13,641
Spanish.....	6,229		6,229
Swedish.....	3,969	5,533	9,502
United States.....	210,031	200,375	410,406
Totals, September, 1921.....	530,634	394,503	925,137
Totals, August, 1921.....	487,219	478,057	965,276
Totals, September, 1920.....	504,349	504,436	1,008,785
Registered gross tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	216,653	138,122	354,775
Chilean.....	7,612	3,814	11,426
Danish.....	9,668	7,014	16,682
Dutch.....	20,955	10,685	31,640
French.....	5,818	5,796	11,614
German.....	2,990		2,990
Greek.....	3,507		3,507
Italian.....	10,548	5,355	15,903
Japanese.....	92,217	49,043	141,260
Norwegian.....	12,548	17,841	30,389
Peruvian.....	13,764	9,020	22,784
Spanish.....	8,108		8,108

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Registered gross tonnage of commercial vessels passing through the Canal, by nationality.—Continued:			
Swedish.....	3,802	5,554	9,356
United States.....	260,897	245,889	506,786
Totals, September, 1921.....	669,087	498,133	1,167,220
Totals, August, 1921.....	607,852	611,965	1,219,817
Totals, September, 1920.....	647,033	646,437	1,293,470
Registered net tonnage of commercial vessels passing through the Canal, by nationality:			
British.....	135,319	86,028	221,347
Chilean.....	4,560	2,288	6,848
Danish.....	6,100	4,470	10,570
Dutch.....	13,358	7,069	20,427
French.....	3,712	3,689	7,401
German.....	1,757	.....	1,757
Greek.....	2,091	.....	2,091
Italian.....	6,429	3,160	9,589
Japanese.....	61,690	33,506	95,196
Norwegian.....	7,581	11,681	19,262
Peruvian.....	7,190	4,517	11,707
Spanish.....	4,898	.....	4,898
Swedish.....	2,839	4,225	7,064
United States.....	169,871	155,546	325,417
Totals, September, 1921.....	427,395	316,179	743,574
Totals, August, 1921.....	387,071	393,874	780,945
Totals, September, 1920.....	404,946	412,864	817,810
Tolls levied against commercial vessels passing through the Canal, by nationality:			
British.....	\$159,184.02	\$105,844.27	\$265,028.29
Chilean.....	4,510.00	2,246.25	6,756.25
Danish.....	6,671.68	5,591.25	12,262.93
Dutch.....	14,766.86	8,740.00	23,506.86
French.....	4,538.75	4,547.50	9,086.25
German.....	2,228.75	.....	2,228.75
Greek.....	4,058.40	.....	4,058.40
Italian.....	7,588.75	3,936.25	11,525.00
Japanese.....	76,548.28	38,946.15	115,494.43
Norwegian.....	9,369.36	14,810.90	24,180.26
Peruvian.....	5,281.25	3,398.75	8,680.00
Spanish.....	5,798.99	.....	5,798.99
Swedish.....	2,857.68	4,287.50	7,145.18
United States.....	210,390.84	185,859.11	396,249.95
Totals, September, 1921.....	513,793.61	378,207.93	892,001.54
Totals, August, 1921.....	465,017.24	490,363.54	955,380.78
Totals, September, 1920.....	494,954.82	515,195.81	1,010,150.63
Tons of cargo carried by commercial vessels passing through the Canal, by nationality:			
British.....	95,349	114,126	209,475
Chilean.....	1,195	985	2,180
Danish.....	6,500	9,265	15,765
Dutch.....	3,285	13,334	16,619
French.....	118	5,210	5,328
German.....	2,500	.....	2,500
Italian.....	898	7,460	8,358
Japanese.....	28,366	48,348	76,714
Norwegian.....	30	22,185	22,215
Peruvian.....	604	2,842	3,446
Swedish.....	.....	8,193	8,193
United States.....	161,875	222,226	384,101
Totals, September, 1921.....	300,720	454,174	754,894
Totals, August, 1921.....	317,970	521,303	839,273
Totals, September, 1920.....	444,217	565,340	1,009,557
A further classification of the above commercial traffic:			
Cargo-carrying vessels—			
Laden.....	90	86	176
Ballast (tolls at laden rate on account of excess fuel).....	15	.....	15
Ballast.....	20	7	27
Passenger ship.....	1	.....	1
Yachts.....	2	.....	2
Total commercial vessels.....	128	93	221

Nationality.	Atlantic to Pacific.	Pacific to Atlantic.	Total.
Tonnage of above vessels, Panama Canal net measurement:			
Cargo-carrying vessels—			
Laden.....	370,877	355,730	726,607
Ballast (tolls at laden rate on account of excess fuel).....	67,220		67,220
Ballast.....	83,847	38,773	122,620
Passenger ship.....	8,252		8,252
Yachts.....	438		438
Total Panama Canal net tonnage.....	530,634	394,503	925,137
Tolls paid on above vessels:			
Cargo-carrying vessels—			
Laden.....	\$369,994.75	\$350,083.50	\$720,078.25
Ballast (tolls at laden rate on account of excess fuel).....	74,391.20		74,391.20
Ballast.....	60,745.80	28,124.43	88,870.23
Passenger ship.....	8,333.75		8,333.75
Yachts.....	328.11		328.11
Totals.....	513,793.61	378,207.93	892,001.54
Motor ships through the Canal.....	5	6	11
Panama Canal net tonnage of above.....	12,710	21,814	34,524
Cargo carried by commercial vessels.....	300,720	454,174	754,894
Average rate of tolls per cargo ton ¹	\$1.23	\$0.77	\$0.95
Average rate of tolls per cargo ton ²	1.71	.83	1.18

¹ Laden vessels only.² Including cargo-carrying vessels in ballast.

Commercial ships without cargo transiting the Canal, exclusive of yachts and other noncargo-carrying vessels:

ATLANTIC TO PACIFIC.

Nationality.	Ballast rate.		Laden rate on account of excess fuel.	
	No. of ships.	Tolls.	No. of ships.	Tolls.
British.....	11	\$37,994.52	1	\$4,218.75
Danish.....	1	2,461.68		
Dutch.....	1	3,429.36		
Japanese.....	1	3,070.08	10	54,874.05
Norwegian.....	1	819.36	2	7,451.25
Spanish.....	1	2,010.24	1	3,788.75
Swedish.....	1	2,857.66		
United States.....	3	8,102.88		
Greek.....			1	4,058.40
Totals.....	20	60,745.80	15	74,391.20

ROUTING OF ABOVE VESSELS.

	No. of vessels.
Europe to west coast of United States.....	15
United States coastwise.....	10
Europe to west coast of Canada.....	2
East coast of United States to west coast of Canada.....	2
Cristobal to west coast of South America.....	2
West Indies to west coast of United States.....	2
East coast of United States to west coast of South America.....	1
East coast of United States to Australasia.....	1
Total vessels without cargo, Atlantic to Pacific.....	35

PACIFIC TO ATLANTIC.

Nationality.	Ballast rate.		Laden rate on account of excess fuel.	
	No. of ships.	Tolls.	No. of ships.	Tolls.
British.....	1	\$3,273.12		
Japanese.....	1	4,597.00		
United States.....	5	20,254.11		
Totals.....	7	28,124.43		

ROUTING OF ABOVE VESSELS.

No. of
vessels.

West coast of United States to east coast of Mexico.....	2
West coast of South America to east coast of Mexico.....	2
Far East to east coast of Mexico.....	1
West coast of United States to east coast of United States.....	1
Balboa, C. Z. to east coast of United States.....	1
Total vessels without cargo, Pacific to Atlantic.....	7

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of, and amount of cargo carried by United States Government vessels passing through the Panama Canal during the month of September, 1921. This traffic passes through the Panama Canal free of tolls; if tolls had been assessed against these vessels, however, at commercial rates; the amounts collected would have been as indicated below:

In this statement is also included the number and tonnage of launches transiting the Canal, together with the tolls collected thereon. Although paying tolls they are included in the noncommercial traffic, being small nonseagoing vessels of under 10 tons measurement.

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States Navy vessels:			
Gunboats.....	2	4	6
Fuel and supply ships.....	3	1	4
Submarines.....	5	2	7
Tugs.....	3	3	6
Submarine chasers.....	2	3	5
Minesweeper.....	1		1
Destroyer.....	1		1
Transport.....		1	1
Barges.....		4	4
Totals.....	17	18	35
United States Army vessels:			
Mine layer.....	1		1
Tug.....	1		1
Totals.....	2		2
Total vessels through Canal free of tolls.....	19	18	37
Tonnage of above vessels:			
Panama Canal net tonnage—			
Naval vessels.....	6,083	7,317	13,400
Army vessels.....	449		449
Total Panama Canal net tonnage.....	6,532	7,317	13,849
Displacement tonnage—			
Naval vessels.....	12,244	12,852	25,096
Cargo carried by above vessels:			
Naval vessels.....	7,915	50	7,965
Tolls which above vessels would have paid if assessed at commercial rates:			
Naval vessels.....	\$13,421.60	\$13,702.56	\$27,124.16
Army vessels.....	323.28		323.28
Totals.....	13,744.88	13,702.56	27,447.44
Launches through the Canal.....	2		2
Panama Canal net tonnage of above.....	4		4
Tolls collected on above.....	\$3.45		\$3.45

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of September, 1921, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Vessels passing through the Canal:			
Commercial.....	128	93	221
United States Government vessels.....	19	18	37
Launches and miscellaneous craft.....	2		2
Total vessels and craft.....	149	111	260

	Cristobal.	Balboa.	Total.
Tonnage of above vessels:			
Panama Canal net measurement—			
Commercial vessels.....	530,634	394,503	925,137
United States Government vessels.....	6,532	7,317	13,849
Launches and miscellaneous craft.....	4		4
Total Panama Canal net tonnage.....	537,170	401,820	938,990
Displacement tonnage—			
Naval vessels.....	12,244	12,852	25,096
Cargo carried by above vessels:			
Commercial..... tons.	300,720	454,174	754,894
Navy vessels..... tons.	7,915	50	7,965
Total cargo through the Canal..... tons.	308,635	454,224	762,859
Deck cargo included in the above..... tons.	891	2,620	3,511
Vessels entering port but not transiting Canal:			
Number entered.....	50	7	57
Number cleared.....	51	7	58
Registered gross tonnage of above:			
Entered.....	239,958	28,732	268,690
Cleared.....	242,503	32,972	275,475
Registered net tonnage of above:			
Entered.....	141,806	18,041	159,847
Cleared.....	143,460	19,940	163,400
Vessels transiting the Canal and handling passengers or cargo at port:			
Number entered.....	45	46	91
Number cleared.....	47	46	93
Registered gross tonnage of above:			
Entered.....	192,603	190,733	383,336
Cleared.....	201,833	190,733	392,566
Registered net tonnage of above:			
Entered.....	113,683	109,945	223,628
Cleared.....	119,124	109,945	229,069
All vessels entering and clearing, including those transiting the Canal:			
Number entered.....	276	237	513
Number cleared.....	275	234	509
Registered gross tonnage of above:			
Entered.....	1,457,188	1,226,310	2,683,498
Cleared.....	1,448,880	1,246,069	2,694,949
Registered net tonnage of above:			
Entered.....	920,907	780,196	1,701,103
Cleared.....	914,135	800,949	1,715,084
Transit cargo arriving..... tons.	787,253	783,382	1,570,635
Transit cargo clearing..... tons.	777,157	768,684	1,545,841
Local cargo arriving..... tons.	33,000	16,309	49,309
Local cargo shipped..... tons.	2,519	258	2,777
Cargo received for transshipment..... tons.	17,510	10,024	27,534
Cargo transhipped..... tons.	31,095		31,095
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received.....	32,182	1,468	33,650
Dispatched..... tons.	20,424	245	20,669
Rehandled..... tons.	2,143	69	2,212
Stevedored..... tons.	20,913	340	21,253
Vessels supplied with bunker coal:			
Commercial other than Panama Railroad.....	57	7	64
Panama Railroad vessels.....	3		3
United States Army vessels.....	2	1	3
Total vessels supplied with bunker coal.....	62	8	70
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons.	11,145	1,365	12,510
Panama Railroad vessels..... tons.	631		631
United States Army vessels..... tons.	84	32	116
Total coal supplied to vessels..... tons.	11,860	1,397	13,257
Coal issues, miscellaneous:			
Panama Canal departments..... tons.	472	302	774
Panama Railroad, excepting vessels..... tons.	585	46	631
United States Army, excepting vessels..... tons.	520		520
Individuals and companies..... tons.	322		322

	Cristobal.	Balboa.	Total.
Coal issues, miscellaneous—continued.			
Total issues from Panama Canal deposits:			
September, 1921..... tons..	13,759	1,745	15,504
August, 1921..... tons..	21,328	1,364	22,692
September, 1920..... tons..	36,861	6,021	42,882
Coal on hand, October 1, 1921..... tons..	126,843	35,359	162,202
Coal on hand, September 1, 1921..... tons..	125,114	25,066	150,180
Coal received during September, 1921..... tons..	15,488	12,038	27,526
<i>United States Navy coal account.</i>			
Issued to U. S. Navy, including vessels..... tons..	902	1,127	2,029
Coal on hand, October 1, 1921..... tons..	65,958	8,149	74,107
Coal on hand, September 1, 1921..... tons..	60,723	9,276	69,999
Coal received during September, 1921..... tons..	6,137		6,137
Commercial vessel supplied with fuel oil.....	1		1
Oil supplied above vessel..... bbls..	2,354		2,354
Fuel oil issues, miscellaneous:			
To Panama Canal departments..... bbls..	5,563	13,055	18,618
To Panama Railroad..... bbls..	210		210
To Army and Navy..... bbls..	204		204
Total issues..... bbls..	8,331	13,055	21,386
Fuel oil on hand, October 1, 1921..... bbls..	70,392	72,931	143,323
Fuel oil on hand, September 1, 1921..... bbls..	79,838	85,461	165,299
Shortage on inventory..... bbls..	1,115		1,115
Taken up on inventory..... bbls..		525	525
Diesel oil issued during the month..... bbls..	27		27
Diesel oil on hand, October 1, 1921..... bbls..	51,179	966	52,145
Diesel oil on hand, September 1, 1921..... bbls..	51,127	966	52,093
Taken up on inventory..... bbls..	79		79
Oil pumped for individuals and companies..... bbls..	309,824	45,347	355,171
Miscellaneous transfer..... bbls..	10,307		10,307
Total oil handled..... bbls..	328,489	58,401	386,890
Vessels furnished with commissary supplies:			
Commercial, other than Panama Railroad.....	47	27	74
Panama Railroad.....	8	1	9
United States Government.....	13	18	31
Total vessels furnished supplies.....	68	46	114
Commissary sales to commercial vessels:			
Ice.....	\$1,656.48	\$480.20	\$2,136.68
Wholesale groceries.....	1,914.00	329.25	2,243.25
Wholesale cold storage.....	12,975.50	1,920.50	14,896.00
Laundry.....	437.17	2,773.23	3,210.40
Miscellaneous.....	512.41	218.19	730.60
Totals.....	17,495.56	5,721.37	23,216.93
Commissary sales to Panama Railroad vessels:			
Ice.....	\$105.00		\$105.00
Wholesale groceries.....	1,442.34	\$162.89	1,605.23
Wholesale cold storage.....	3,448.10	711.02	4,159.12
Laundry.....	85.33		85.33
Miscellaneous.....	232.30		232.30
Totals.....	5,313.07	873.91	6,186.98
Commissary sales to United States Government vessels:			
Ice.....	\$260.61	\$284.25	\$544.86
Wholesale groceries.....	765.64	2,595.49	3,361.13
Wholesale cold storage.....	3,236.57	9,347.30	12,583.87
Laundry.....	256.39	8.82	265.21
Miscellaneous.....	212.03	365.53	577.56
Totals.....	4,731.24	12,601.39	17,332.63
Total commissary sales to all vessels:			
September, 1921.....	\$27,539.87	\$19,196.67	\$46,736.54
August, 1921.....	38,479.01	64,744.13	103,223.14
September, 1920.....	85,557.52	72,508.62	158,066.14
Admeasurement certificates:			
United States equivalent issued or made.....	37	5	42
Measured for Panama Canal net tonnage.....	15	5	20
United States equivalent or Panama Canal net tonnage corrected.....	36	9	45

	Cristobal.	Balboa.	Total.
Services of harbor equipment:			
Tugs, total operating hours	408	262	670
Launches, total operating hours	1,162	1,092	2,254
Vessels repaired at Panama Canal shops:			
Commercial	31	14	45
United States Government	4	5	9
Canal equipment	12	12	24
Vessels dry-docked:			
Commercial	2	1	3
United States Government	3	5	8
Canal equipment	6	12	18
Services to American vessels:			
Crews shipped	3		3
Crews paid off	3		3
Shipping articles written	3		3
Marine notes of protest noted	16	2	18
Services to American seamen:			
Seamen shipped	254	74	328
Seamen discharged	297	43	340
Seamen lodged and subsisted	8	10	18
Seaman deceased	1		1
Seamen repatriated	11	8	19
Seamen deserted	20	8	28
Wages of American seamen:			
Total wages earned	\$13,292.07	\$4,041.94	\$17,334.01
Deductions approved by Deputy Shipping Commissioner	2,020.00	1,417.63	3,437.63
Balance due seamen	11,272.07	2,624.31	13,896.38
Paid to seamen	9,128.00	2,225.10	11,353.10
Received on deposit for seamen	2,144.07	399.21	2,543.28
Clearances issued	138	133	271
Bills of health issued	137	135	272
<i>Movement of passengers.</i>			
Disembarking at Canal ports:			
First class—			
From Atlantic ports	908		908
From Pacific ports	143	75	218
Total, first class	1,051	75	1,126
Other than first class—			
From Atlantic ports	942	5	947
From Pacific ports	95	198	293
Total, other than first class	1,037	203	1,240
Total, disembarking at Canal ports	2,088	278	2,366
Embarking from Canal ports:			
First class—			
For Atlantic ports	1,096		1,096
For Pacific ports	178	97	275
Total, first class	1,274	97	1,371
Other than first class—			
For Atlantic ports	1,600		1,600
For Pacific ports	78	67	145
Total, other than first class	1,678	67	1,745
Total, embarking from Canal ports	2,952	164	3,116
Remaining on board vessels:			
First class—			
Bound from Atlantic to Pacific ports	422	564	986
Bound from Pacific to Atlantic ports	528	671	1,199
Bound from Atlantic to Atlantic ports	230		230
Bound from Pacific to Pacific ports		14	14
Total, first class	1,180	1,249	2,429

	Cristobal.	Balboa.	Total.
Remaining on board vessels—Continued:			
Other than first class—			
Bound from Atlantic to Pacific ports.....	2,115	2,112	4,227
Bound from Pacific to Atlantic ports.....	280	430	710
Bound from Atlantic to Atlantic ports.....	124		124
Bound from Pacific to Pacific ports.....		105	105
Total, other than first class.....	2,519	2,647	5,166
Total remaining on board.....	3,699	3,896	7,595
Total passengers arriving.....	5,787	4,174	9,961
Total passengers departing.....	6,651	4,060	10,711
Arrivals in excess of departures.....		114	
Departures in excess of arrivals.....	864		
Net excess of departures.....			750

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of September, 1921, as compared with that of the preceding month, and of the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	91	121	212	9	4	13	225
Pedro Miguel.....	92	126	218	14	15	29	247
Miraflores.....	91	124	215	14	14	28	243
Total lockages, September, 1921.....	274	371	645	37	33	70	715
Total lockages, August, 1921.....	340	345	685	42	68	110	795
Total lockages, September, 1920.....	378	366	744			74	818

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	94	130	224	25	27	52	276
Pedro Miguel.....	91	127	218	33	37	70	288
Miraflores.....	91	127	218	31	36	67	285
Total vessels, September, 1921.....	276	384	660	89	100	189	849
Total vessels, August, 1921.....	359	363	722	90	161	251	973
Total vessels, September, 1920.....	399	390	789			144	933

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	44	42	42
Canal equipment.....	8	28	25
Total noncommercial vessels.....	52	70	67

The total consumption of water for lockages, loss in leakage, and for maintenance was as follows:

	Gatun.	Pedro Migue'.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	858,920,000	825,290,000	748,560,000
Leakage.....	20,000,000	15,000,000	67,000,000
Total consumption, September, 1921.....	878,920,000	840,290,000	815,560,000
Total consumption, August, 1921.....	955,490,000	875,430,000	891,700,000
Total consumption, September, 1920.....	947,800,000	1,025,510,000	958,870,000

METEOROLOGY AND HYDROGRAPHY.

The rainfall over the Canal Zone and immediate vicinity was generally slightly below normal. Totals ranged from 3.27 inches at Balboa Heights to 15.69 inches at Monte Lirio. The greatest amount of rainfall recorded on any one day was 3.07 inches at Brazos Brook on the 16th. The estimated rainfall over Gatun Lake watershed area was 11.98 inches, compared with an 11-year mean of 11.66 inches; while over the Chagres River watershed, or above Alhajuela, it was 11.61 inches, compared with a 20-year mean of 12.46 inches.

The discharge of the Chagres River at Alhajuela was 3,135 c. f. s., being 2 per cent below the 20-year September mean of 3,187 c. f. s. The maximum discharge for the month of September of record was 4,732 c. f. s. in 1917, and the minimum September discharge was 1,722 c. f. s. in 1905. The maximum momentary discharge for the month was 17,750 c. f. s. at elevation 99.57 feet on the 1st.

The Gatun Lake watershed total yield for the month was 9,457 c. f. s., being 9 per cent above the 11-year September mean of 8,712 c. f. s. The maximum total yield for the month of September of record was 11,946 c. f. s. in 1917, while the minimum total yield was 4,703 c. f. s. in 1911. The net yield for the month was 8,995 c. f. s., which is 10 per cent above the September average yield of 8,176 c. f. s. The lake varied in elevation from 85.81 on the 23d to 85.40 feet on the 21st.

The draft on the lake for lockages and power was 2,182 c. f. s., compared with 2,234 c. f. s. for last month, and 2,473 c. f. s. for September, 1920. The ratio of water expended for power and lockages was 2.35 to 1. A total of 443.5 spillway gate hours were necessary to control the lake during the month.

Gamboa pump station and Brazos Brook reservoir drew 38.2 and 35.4 million cubic feet, respectively, from the lake.

Miraflores Lake varied in elevation from 54.30 feet to 52.47 feet, and ended at elevation 53.77 feet midnight the 30th.

Temperature records for the month of September are given below:

Station.	Maximum.	Minimum.	Monthly mean.
Balboa Heights.....	91	71	79.6
Gamboa.....	89	71	79.2
Alhajuela.....	91	68	78.5
Gatun.....	89	72	80.3
Colon.....	91	72	81.5

The following gives a comparison of the monthly rainfall by sections for September, 1921, and September, 1920:

Section.	Rainfall.		Rainy days.	
	1921.	1920.	1921.	1920.
	<i>Inches.</i>	<i>Inches.</i>		
Pacific.....	5.64	11.74	23	22
Central.....	11.75	12.20	24	23
Atlantic.....	11.38	7.94	24	22

A slight tremor from a distant disturbance was recorded on the 10th of the month, beginning at 11.22 p. m., and ending at 1.20 a. m., of the 11th. The tremor was so slight that no estimate could be made as to the distance or direction of the epicenter.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., is shown in comparative form, in the following tabulation:

	September, 1921.	August, 1921.	September, 1920.
Gross output, KWII:			
Gatun hydroelectric station.....	5,198,300	5,522,900	6,129,100
Miraflores steam plant.....	1,970	2,100	19,490
Combined gross output.....	5,200,270	5,525,000	6,148,590
Water consumption..... cubic feet..	3,970,751,857	4,186,412,827	4,414,970,000
Oil consumption..... barrels..	1,953	1,990	1,987
Power distributed to consumers..... KWII..	4,396,098	4,663,235	5,183,953
Loss of power in plant auxiliaries, transmission and transformation.....	804,172	861,765	964,637
Per cent of loss of power to gross output.....	15.5	15.6	15.5

The following new construction work was under progress during the month, with completion on August 31 and September 30 as follows:

	Per cent completed.	
	Aug. 31.	Sept. 30.
Installation of new 8,400 KVA transformer and new tie-line equipment at Gatun substation.	80	90
Installation of 2 complete feeder equipments at Balboa substation.	95	95
Installation of electrical equipment at hydroelectric station.	55	100

Miscellaneous electrical repairs and installations of electrical equipment were made on 11 vessels at Cristobal and 25 vessels at Balboa during the month. There were 374 work orders issued for work to be performed by the Electrical Division during the month of September, as compared with 438 for August.

SHOP, FOUNDRY, AND DRY DOCK WORK.

At the Balboa shops, miscellaneous repairs were made on 31 vessels, the more important of which were as follows:

The new boilers were placed in the steamship *Panama*, together with the uptake and smokestack. Work on the double bottoms was completed. Construction of new cold storage rooms was completed with the exception of piping installation. Substantial progress was made on the other repairs to the vessel.

On the steamship *Solana*, repairs to the bow plating were completed together with miscellaneous machinery repairs to the vessel. Repairs to the hull and miscellaneous engine and deck repairs were made on the steamship *Bradford*. The boilers and feed pump of the steamship *Donald McKay* were repaired.

The routine docking of the Dredging Division fleet, which was started at the end of August, was continued, 12 vessels being dry-docked during the month.

At the Cristobal shops miscellaneous repairs were made on 47 vessels, the more important of which were as follows:

The U. S. S. P. 1841 was docked and the bottom cleaned and painted. The fore-castle deck was removed and replaced by a wooden deck; the smokestack was removed and the housing over engine and firerooms renewed.

On the U. S. S. No. 287, all C. and R. sea valves were overhauled; the bottom cleaned, and screens on underwater suction renewed where necessary. One propeller blade was straightened and other miscellaneous repairs were made.

The hull of barge No. 21 was cleaned, patched, and painted. Barge No. 1 was cleaned and painted and 6 shell plates renewed.

There were 29 vessels dry-docked during the month; 11 at Cristobal, and 18 at Balboa.

The output of the Mechanical Division in patterns and castings for September, as compared with the preceding month, was as follows:

	September, 1921.			August, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron	14	248	10,407	5	1,035	29,240
Steel	2	26	6,720	2	19	16,170
Brass	4	152	5,275	15	483	11,737

The 5 towing locomotives for the locks were completed during the month and delivered for installation of electric wiring.

The routine inspection, hostling, and repair of equipment for the Panama Railroad Company was carried on during the month. Four hundred and forty job orders were completed during the month, with 244 remaining uncompleted at the end of the month.

One hundred and twenty special individual and company job orders were issued during the month, 12 of which were for work on naval vessels, and 25 covered repairs to commercial vessels, exclusive of the Panama Railroad steamships.

DREDGING DIVISION.

There were no slide movements of consequence during the month. Cucaracha slide remained inactive except for occasional periodical surface movements and a slight general movement near the south crest, about elevation plus 360, but which at present is considered unimportant.

A slow general movement has continued through the entire length of West Culebra and East Barge Repair slides, and a slight independent movement occurred at East Culebra slide on the 10th, between stations 1765 and 1770, which caused about 35,000 cubic yards of material to come into the Canal prism.

No inconvenience to Canal traffic was occasioned by any of the above movements.

The total excavation in September, including earth and rock, was 460,250 cubic yards, as follows:

Cubic yards.	Classified as--		Character of work.	Stations.	Equipment.
	Earth.	Rock.			
24,300	4,000	20,300	Maintenance.....	<i>Gaillard Cut, Powder House Slide.</i> 1630-00 to 1639-00 E.....	<i>Paraiso.</i>
69,050	17,210	51,840	Maintenance.....	<i>Gaillard Cut, East Barge Repair Slide.</i> 1760-00 to 1770-00.....	<i>Paraiso.</i>
61,900	26,900	35,000	Maintenance.....	<i>Pacific entrance.</i> 2316-50 to 2274-00 W.....	<i>Cascadas.</i>
10,000	10,000		Original.....		<i>Cascadas.</i>
128,500	128,500		Maintenance.....	2183-40 to 2220-50 W.....	<i>No. 84.</i>
12,000	12,000		Maintenance.....	2155-00 to 2158-50 E.....	<i>No. 86.</i>
10,000	10,000		Original.....	2129-00 to 2135-00 W.....	<i>No. 86.</i>
12,000	12,000		Maintenance.....		<i>No. 86.</i>
13,900	13,900		Maintenance.....	2123-00 to 2125-00 E.....	<i>No. 86.</i>
118,600	118,600		Maintenance.....	2140-00 to 2160-00 W.....	<i>No. 86.</i>
460,250	353,110	107,140			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	93,350
Dumped on San Juan fill.....	128,500
Dumped on Arsenal fill.....	118,600
Dumped on flats east of Canal.....	47,900
Dumped at sea, Pacific entrance.....	71,900
Total.....	460,250

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations, and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form.

	September, 1921.	August, 1921.	September, 1920.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	708,203,000	740,414,000	902,380,815
Filtration plants.....	426,862,000	455,145,000	496,443,000
Water consumed by Panama City.....	91,415,000	97,595,000	82,030,000
Water consumed by Colon.....	52,807,000	54,005,250	53,553,000
Sales of water to vessels.....	9,992,132	12,289,017	13,477,217

Construction work, as itemized below, was under progress during the month, with completion on August 31 and September 30 as shown:

	Per cent completed.	
	Aug. 31.	Sept. 30.
Construction of new concrete sea wall, Santo Tomas Hospital.....	50	53
Extension of roads, new Santo Tomas Hospital.....	6	6
Concrete roof, low service reservoir.....	70	98
Grading at Silver City, Mount Hope.....	60	75
Storm sewer, Diablo Road, at lumber shed.....	45	60
Foundation for statue of Balboa.....	32	79
Extension of sewers, new Santo Tomas Hospital.....		35

Municipal work for the Army and Navy is separately reported.

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	Men.	Women.	Children.	Total occupants.		
				September 1921.	August, 1921.	September, 1920.
Americans.....	2,704	2,065	2,287	7,056	7,056	8,199
Europeans.....	142	37	79	258	231	223
West Indians.....	5,116	2,566	5,316	12,998	13,166	10,979
Totals, September, 1921.....	7,962	4,668	7,682	20,312		
Totals, August, 1921.....	8,064	4,629	7,760		20,453	
Totals, September, 1920.....	8,696	4,093	6,543			19,401

WORKING FORCE—NUMBER OF EMPLOYEES.

The total number of employees as of September 21, 1921, was 12,375, as compared with 19,438 as of September 22, 1920, making the number of employees of The Panama Canal and the Panama Railroad Company approximately 64 per cent of the number a year ago.

The following tabulation shows the number of gold and silver employees, as of September 21, 1921, by departments, together with a comparison of the working force of the preceding month, and that of September, 1920:

	Employees.		Total employees.		
	Gold.	Silver.	September, 1921.	August, 1921.	September, 1920.
Operation and Maintenance:					
Office.....	28	32	60	61	68
Electrical.....	165	159	324	358	494
Municipal Engineering.....	86	676	762	827	1,300
Lock Operation.....	167	559	726	729	731
Dredging.....	156	742	898	903	1,304
Mechanical.....	592	973	1,565	1,672	2,790
Marine.....	170	411	581	615	698
Fortifications.....	47	257	304	261	430
Totals.....	1,411	3,809	5,220	5,426	7,815
Supply Department:					
Quartermaster.....	192	1,153	1,345	1,477	3,041
Subsistence.....	23	242	265	289	413
Commissary.....	200	1,066	1,266	1,318	1,934
Cattle Industry, Plantations.....	16	129	145	146	458
Hotel Washington.....	9	90	99	99	101
Totals.....	440	2,680	3,120	3,329	5,947
Accounting Department.....	203	7	210	214	261
Health Department.....	233	770	1,003	969	1,076
Executive.....	525	220	745	758	779
Totals.....	961	997	1,958	1,941	2,116
Panama Railroad:					
Superintendent.....	61	244	305	399	680
Transportation.....	86	111	197	209	325
Receiving and Forwarding Agency.....	68	995	1,063	841	1,500
Coaling stations.....	100	412	512	673	1,055
Totals.....	315	1,762	2,077	2,122	3,560
Grand totals, September, 1921.....	3,127	9,248	12,375		
Grand totals, August, 1921.....	3,239	9,579		12,818	
Grand totals, September, 1920.....	4,421	15,017			19,438

¹ Includes employees of former Building Division.

VITAL STATISTICS.

A total of 165 deaths occurred during the month of September, 1921, among the population of the Canal Zone and the cities of Panama and Colon, which is equivalent to an annual death rate of 15.94 per thousand. The 3 leading causes of death were (a) tuberculosis, (b) pneumonia, and (c) diarrhea and enteritis. Among other causes of death listed were 2 from malaria fever, 1 each from typhoid fever and diphtheria, and 6 from external causes. Of the total deaths, 63, or 38 per cent, occurred among children under 5 years of age. There were 12 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 321 live births reported during the month, and 22 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 33.13 per thousand population. Deaths among children under 1 year of age numbered 46, giving an infant mortality rate, based on the number of births reported for September, 1921, of 143.30 per thousand live births.

Ninety-nine cases of malaria were reported during the month, of which 18 were employees and 81 nonemployees; of the nonemployees, 71 were soldiers. These malarial cases originated as follows: In Panama City, 4; in the Canal Zone, 64; outside of the Canal Zone, 31.

Among other diseases reported during the month, there were 5 cases of smallpox, 2 of typhoid fever, 2 of dysentery, 2 of leprosy, 5 of diphtheria, and 1 of scarlet fever.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, as compared with the preceding month, and the corresponding month of last year, were as follows:

	September, 1921.	August, 1921.	September, 1920.
Materials received on U. S. requisitions during the month, chargeable as follows:			
Operation and Maintenance.....	\$67,004.52	\$231,470.63	\$938,166.68
Construction and equipment.....			25,315.50
Miscellaneous.....	13,819.02	17,068.84	5,612.84
Totals.....	80,823.54	248,539.47	969,095.02
Cash sales on the Isthmus:			
Stock.....	27,105.54	26,170.91	48,643.53
Fuel oil (including sales to steamships).....	108.88	1,947.40	171,467.60
Scrap.....	400.01	1,270.07	3,242.22
Obsolete and second hand material.....	828.31	5,432.93	1,752.34
Totals.....	28,442.74	34,821.31	225,105.60
Sales to steamships from storehouses:			
Miscellaneous stock items.....	11,004.36	9,136.56	28,522.21
Fuel oil.....	108.88	1,207.40	142,937.50
Totals.....	11,113.24	10,343.96	171,459.71

Respectfully,

M. L. WALKER,
Acting Governor.

Improvements in Operating Machinery at Cristobal Coaling Plant.

During the past year several improvements in the equipment of the coaling plant at Cristobal have made it possible to bunker ships with even greater expedition.

The wharf bunker, on the end wharf of the plant, which extends between the unloader wharf and the reloader wharf at their seaward end, was originally built for supplying coal to tugs and other comparatively small craft through long chutes. It has been redesigned and equipped with two booms similar to those on the reloaders. This has made another berth for full-rate bunkering at the plant, in addition to those already available at the reloader wharf. The booms are 30 feet in length and operate on swing circles. On account of the height of the wharf bunker this berth is especially suitable for coaling high ships.

Slight alterations in the operating machinery in all of the reloader towers increased their capacity for bunkering.

Two barges equipped with conveyors (*Nos. 13 and 29*) were redesigned. Steel superstructures were substituted for the wooden booms, and the rated capacity of the conveyors on each barge was

increased from 75 to 200 tons per hour. Reconstruction on barges *Nos. 15 and 21* had been done in the previous year, giving each of them a rated capacity of 400 tons an hour, with self-trimming features which reduce the number of trimmers needed in their operation. Barges *Nos. 13 and 29* are each equipped with two 40-foot Demayo conveyors; *Nos. 15 and 21* have each four 55 and 60-foot conveyors.

A reloader attachment is to be placed on 1 of the 4 unloader towers on the wharf at which the colliers are discharged into the plant. This will make it possible to bunker a ship at the unloader wharf, while at the same time having space and equipment to discharge a collier. With this improvement it will be possible to bunker 4 large vessels simultaneously at the pier, while discharging a fifth; and the 4 conveyor barges will be available for bunkering ships at the cargo docks or in the bay, as well as at the plant.

Improvements in the unloading equipment have increased materially the rate at which colliers can be discharged into the plant. Among these was the installation of equipment for using oil fuel in boilers of the unloaders; this has allowed the working of the machinery continuously under a head of steam which could not be maintained with coal.

Working only 2 of the 4 unloaders, the plant recently discharged a cargo of 9,611 long tons of coal from the steamer *Cristobal* in 29 working hours. This was considered especially good in view of the fact that the vessel was built for carrying general cargo and passengers and is not well adapted to the handling of coal. The regular colliers, *Achilles* and *Ulysses*, carrying about 12,000 tons, are discharged in from 15 to 30 hours, depending on the amount of bunkering being done at the same time.

During the last fiscal year the coal sold from the station amounted to about 475,000 tons. During the first 7 months of the year the sales averaged about 43,000 tons per month, and during the last 5 months about 34,000 tons. With the reduction in price of \$3 per ton, effective October 15, it is expected that sales will again increase. In addition to the coal sold, 75,983 tons were delivered during the fiscal year to Navy vessels from the stock of Navy coal maintained at the plant.

It has been the policy of the Panama Canal coaling plants to discharge ships as quickly as possible. Below are a few records which were made during the last fiscal year. The hours and minutes include the time required for trimming in bunkers:

Name of ship.	Tons of coal bunkered.	Time.		Date.
		Hours.	Minutes.	
Wiltshire.....	1,102	1	25	November 25, 1920.
Maimoa.....	656		45	May 10, 1921.
Athenic.....	2,005	10	20	May 10, 1921.
Antillian.....	77		10	May 11, 1921.
Cape Henry.....	285		20	May 17, 1921.
Transvaal.....	53		5	June 1, 1921.

Trimming in bunkers, of course, retards the rate of delivery. On February 18 the Navy collier *Neptune* took 8,296 tons of coal from the coaling plant in her hold as cargo. It was loaded in 4 hours and 35 minutes.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, September, 1921.*

From—	NORTH AMERICA.						EUROPE.												Grand total.	Per cent of total cargo.					
	UNITED STATES.						Cristobal, C. Z.	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Norway.	Spain.	Sweden.			Europe. ¹	Total, Europe.	East coast of South America.		
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	West Indies.																				
SOUTH AMERICA:																									
Chile.....	5,387	5,256		10,623			10,623	6,042	1,319	3,500	4,232	3,279	2,288	5,400							9,888	36,008		46,691	10.0
Colombia.....	2,481			2,481		1,619	4,100																70	4,170	0.9
Ecuador.....	2,161			2,161		4,753	6,914	265			44	300	6,914			213					406	1,228		8,142	1.8
Peru.....	927			927		2,818	3,745	4,946			2,000	350									118	7,296		11,041	2.4
West coast of South America.....	3,270			3,270		1,833	5,103	133														251		5,354	1.2
Total, South America.....	14,206	5,256		19,462		11,023	30,485	11,386	1,319	3,500	6,276	3,929	2,288	5,400	213	60					10,412	44,783	70	75,338	16.6
NORTH AMERICA:																									
West coast of United States.....	88,841	503,155		92,406	4,896	76	97,468	136,288	15,650	2,350	157	4,007	1,078		3,000	7,665	175	50,755	221,095	634	319,197			70.3	
West coast of Canada.....		1,454		1,454			1,454	1,398			391						300	2,674	4,763		6,217	1.3		6,217	1.3
West coast of Central America.....						890	890													230				1,120	0.3
Total, North America.....	88,841	1,054	3,155	93,950	4,896	966	99,812	137,686	15,650	2,350	548	4,007	1,078		3,000	7,665	475	53,659	226,088	634	326,534			70.3	
ASIA:																									
China.....	1,635			1,635			1,635																	1,635	0.4
Japan.....	128			128			128																	128	0.0
Philippines.....	7,446			7,446			7,446																	7,446	1.6
Far East.....	1,508			1,508			1,508																	1,508	0.3
Malay Peninsula.....	799			799			799																	799	0.2
Total, Asia.....	11,516			11,516			11,516																	11,516	2.5
AUSTRALASIA:																									
Australia.....	10			10			10	1,415																1,415	0.3
New Zealand.....	170			170			170	14,628																14,796	3.3
Australasia.....	5,648			5,648			5,648	4,151																9,799	2.1
Total, Australasia.....	5,828			5,828			5,828	20,192																20,192	5.7
HAWAII:																									
Grand totals.....	135,157	7,210	3,155	145,522	4,896	11,989	162,407	169,234	16,969	5,850	6,824	7,936	3,366	5,400	3,213	7,725	475	64,071	291,063	704	454,174	100.0			
Per cent of total cargo, September, 1921.....	29.8	1.6	0.7	32.1	1.1	2.6	35.8	37.3	3.8	1.3	1.5	1.8	0.7	1.1	0.7	1.7	0.1	14.1	64.1	0.1	100.0				
Per cent of total cargo, August, 1921.....	33.6	2.7	3.3	39.6	0.8	2.6	43.8	30.4	0.9	0.6	0.1	2.4	1.5	2.0	0.1	0.7		9.1	56.1	0.1					
Per cent of total cargo, September, 1920.....	46.6	5.1	5.0	56.7	3.0	2.2	61.9	23.6		0.9	2.2	0.9	1.9	0.4	0.5			2.3	33.6						

* General cargo not routed so as to allow segregation between definite ports.

† Figures represent tons of 2,240 pounds.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, September, 1921.¹

From—	SOUTH AMERICA.					NORTH AMERICA.					ASIA.					AUSTRALASIA.				Grand totals.	Per cent of total cargo.			
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. ²	Total South America.	West coast of United States.	Canada.	West coast of Central America.	Balboa, C. Z.	Total North America.	China.	Japan.	Philippines.	Far East. ³	Total, Asia.	Australia.	New Zealand.	Australasia. ²			Total, Australasia. ²	Hawaii.	
UNITED STATES:																								
North Atlantic ports.....	268		48	3,259	3,673	7,248	49,804	238	59	12,038	50,101	10,848	41,796	4,622	11,753	69,019	5,400			14,500	19,900	2,400	148,668	49.6
South Atlantic ports.....	673		138	173	169	1,153	831				12,869	2,423	7,913		2,760	13,066							27,118	9.0
Gulf ports.....							20,922	1,000			21,922	7,685			15,761	23,446							45,368	15.1
Total, United States.....	941		186	3,432	3,842	8,401	71,557	1,238	59	12,038	84,892	20,956	49,709	4,622	30,274	105,561	5,400			14,500	19,900	2,400	221,154	73.7
East coast of Mexico.....	7,889					7,889					4,837	10,000			10,000								17,889	5.9
Atlantic terminus, Cristobal, C. Z.....		288	34			2,437	1,167		3,670		4,837												7,274	2.4
West Indies.....					6	6	72,000		2,007		2,007									3,280			2,013	0.7
East coast of Canada.....																							3,280	1.1
Total, North America.....	8,830	288	220	3,432	5,963	18,733	72,731	3,238	3,729	12,038	91,736	20,956	59,709	4,622	30,274	115,561	5,400			17,780	23,180	2,400	251,610	83.8
EUROPE:																								
Belgium.....							3,734	332			4,066												4,066	1.3
British Isles.....	2,490					5,360	2,866	1,908			4,774								5,200	14,466	19,686		29,820	9.9
France.....	60			30	118	178																	178	0.1
Germany.....	125			200	2,475	2,800	1,524	123			1,647												4,447	1.5
Holland.....	210					210	215	103			318												528	0.1
Italy.....	14				44	58																	58	0.0
Europe.....	285		51	266	3,151	3,753	1,310				1,310												5,063	1.7
Total, Europe.....	3,184		51	496	8,628	12,359	9,649	2,466			12,115								5,220	14,466	19,686		44,160	14.6
East coast of South America.....		814				814	4,136				4,136												4,950	1.6
Grand totals.....	12,014	1,102	271	3,928	14,591	31,906	86,516	5,704	3,729	12,038	107,987	20,956	59,709	4,622	30,274	115,561	5,400		5,220	32,246	42,866	2,400	300,720	100.0
Per cent of total cargo, September, 1921.....	4.0	0.4	0.1	1.3	4.8	10.6	28.8	1.9	1.2	4.0	35.9	7.0	19.9	1.5	10.1	38.5	1.8	1.7	10.7	14.2	0.8	100.0	.....
Per cent of total cargo, August, 1921.....	5.7	0.5	0.2	0.7	10.6	17.7	18.8	2.4	0.4	8.8	30.4	6.2	13.6	1.3	15.6	36.7	6.3	2.6	6.0	14.9	0.3	100.0	.....
Per cent of total cargo, September, 1920.....	27.5	0.5	0.3	0.4	7.8	36.4	17.2	1.2	0.4	2.9	24.7	9.4	8.0	1.5	4.7	23.6	3.2	4.9	7.1	15.2	.....	.....	.....

¹ Figures represent tons of 2,240 pounds.² General cargo not routed so as to allow segregation between definite ports.

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, October 22, 1921.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Kaschi Maru.	15	7 19	16	6 30	16	14 46	16	17 00	Japanese.	Kokusa Kabushiki K. Kaisha.	385.0	51.0	28.0	Galveston.	Yokohama.	General.	7,021	5,914	4,388
Suzaki.	15	13 15	16	6 30	16	15 25	16	17 00	French.	Cia Franco-Paquette.	111.0	29.0	12.0	Rouen.	Tahiti.	General.	300	202	163
Ebro.	15	12 45	16	7 33	16	16 03	16	18 03	British.	Pacific Steam Navigation Co.	450.0	58.0	23.7	New York.	Valparaiso.	General.	963	9,089	6,215
Archel.	15	10 16	16	9 09	16	16 58	16	18 03	British.	Harrison Line.	410.0	52.0	23.0	Glasgow.	Los Angeles.	General.	2,164	6,245	4,305
Steel Inventor.	15	15 16	16	10 23	16	17 35	16	19 12	American.	United States Steel Products Co.	424.0	56.0	26.0	New York.	Yokohama.	Sulphate, steel.	7,201	7,539	5,448
Honolulu.	14	14 40	16	11 06	16	15 16	16	19 53	French.	Cia Gle. Transatlantique.	390.0	51.0	17.0	Havre.	San Francisco.	Liquors, etc.	245	6,020	4,363
S. C. S.	17	7 30	17	7 33	17	15 04	17	21 26	American.	United States Navy.				Cristobal.	Balboa.	General.	1,950	5,148	3,523
Cape Henry.	17	9 32	17	13 11	17	18 05	17	21 26	American.	Ad. Gulf & Pacific S. Co.	376.0	52.0	17.7	New York.	Los Angeles.	General.	1,950	5,148	3,523
Torrey.	17	22 18	18	6 54	18	14 21	18	15 30	Norwegian.	Martin Mosvold.	400.0	52.0	16.0	Norfolk.	Astoria.	Ballast.	6,698	4,990	
Osage.	18	8 05	18	8 45	18	16 16	18	18 03	American.	Moore & McCormack.	397.0	50.0	18.0	New York.	Port Angeles.	Ballast.	5,220	3,734	
Kazembe.	18	10 37	18	12 37	18	19 27	19	0 30	Peruvian.	Peruvian Line.	381.0	46.0	19.6	Cristobal.	Callao.	General.	220	4,803	2,951
Siberian Prince.	18	10 37	19	10 50	19	17 42	19	18 37	British.	Ellerman & Bucknell.	414.0	50.0	25.1	New Orleans.	Kobe.	General.	6,000	5,611	4,102
Hague Maru.	19	10 45	19	11 15	19	19 10	19	21 48	Japanese.	Osaka Shosen Kaisha.	423.0	56.0	16.0	Newport.	Vancouver.	Ballast.	6,863	6,267	4,565
Deerfield.	19	12 08	20	6 14	20	14 17	20	15 30	Norwegian.	Hakken J. Wallen.	407.0	52.0	26.0	Danzig.	Singapore.	General.	6,863	6,267	4,565
Ersviken.	19	12 08	20	6 14	20	14 17	20	15 30	Norwegian.	Hakken J. Wallen.	407.0	52.0	26.0	Danzig.	Singapore.	General.	6,863	6,267	4,565
Panaman.	20	7 15	20	8 30	20	16 01	20	17 15	American.	Elder Steel Steamship Co.	434.0	53.0	17.6	New York.	San Francisco.	Ballast.	7,893	5,647	
Cold Harbor.	20	7 18	20	9 15	20	16 48	21	4 49	American.	American-Hawaiian Line.	390.0	54.0	19.0	New York.	Los Angeles.	General.	2,880	7,098	5,029
Robn Adair.	20	7 35	20	10 33	20	18 39	20	19 45	American.	N. Amer. Western S. S. Co. (S.B.).	425.0	55.0	26.0	Philadelphia.	Los Angeles.	General.	2,833	6,131	4,418
Husso.	20	7 52	20	10 33	20	18 39	20	19 45	American.	Sea Shipping Co.	380.0	54.0	20.6	New York.	Los Angeles.	General.	8,012	7,470	5,618
Willbilo.	20	16 07	21	6 28	21	14 15	21	15 18	Chilean.	South American Steamship Line.	380.0	54.0	20.6	Cristobal.	Valparaiso.	General.	7,000	7,083	5,882
Vancouver.	20	16 07	21	6 28	21	14 15	21	15 18	American.	Imperial Oil Co.	499.0	58.0	21.0	New York.	Seattle.	Crude oil.	15,000	18,042	6,254
D. G. Schofield.	20	19 04	21	9 00	21	16 41	21	17 50	American.	Standard Oil Co.	440.0	58.0	27.0	Mata Redondo.	Iloco B. C.	Oil, naphttha.	1,338	955	15,234
Buckeye State.	21	4 39	21	9 30	21	16 41	21	17 50	American.	Mason Navigation Co. (S. B.).	517.0	72.0	23.0	Baltimore.	Hilo.	General.	1,338	955	15,234
Aruluen.	21	10 27	21	11 13	21	19 03	22	14 30	British.	Australian Government.	420.0	55.0	18.0	Glasgow.	Brisbane.	General.	1,239	7,815	6,092
Salvador.	21	10 47	22	6 05	22	13 47	22	16 50	British.	Pacific Steam Navigation Co.	215.0	33.0	13.7	Cristobal.	Guayaquil.	General.	7,564	7,815	6,092
Toyama Maru.	21	10 47	22	6 05	22	13 47	22	16 50	Japanese.	Nippon Yusen Kaisha.	445.0	58.0	22.7	New York.	Shanghai.	General.	4,257	1,908	1,121
A. L. Kent.	22	10 43	22	8 40	22	16 03	22	17 02	American.	Crowell & Thurlow Steamship Co.	395.0	55.0	19.9	New York.	Seattle.	General.	4,257	1,908	1,121
Sinaloa.	22	10 43	22	10 55	22	18 11	23	1 40	Norwegian.	A. O. Lindvig.	265.0	38.0	12.0	Vera Cruz.	San Francisco.	Ballast.	2,000	8,300	6,026
Pomona.	22	5 34	22	11 25	22	19 19	22	20 24	American.	Williams, Dimond & Co. (S. B.).	440.0	56.0	22.0	Antwerp.	San Francisco.	General.	2,000	8,300	6,026

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

* Schooner.

City of Van-																				
cover	15	16 00	16	6 55	16	14 32	16	15 50	British.	J. Coughlan & Sons.	411.5	54.0	24.0	Tacoma.	Belfast.	General.	7,167	6,614	4,995	
Walter A.	15 <td>19 00</td> <td>16</td> <td>8 03</td> <td>16</td> <td>15 19</td> <td>16</td> <td>15 19</td> <td>American.</td> <td>Luckenbach Line.</td> <td>446.5</td> <td>56.1</td> <td>27.1</td> <td>Portland.</td> <td>Philadelphia.</td> <td>General.</td> <td>5,800</td> <td>8,785</td> <td>6,592</td>	19 00	16	8 03	16	15 19	16	15 19	American.	Luckenbach Line.	446.5	56.1	27.1	Portland.	Philadelphia.	General.	5,800	8,785	6,592	
Luckenbach.	15	22 30	16	9 01	16	16 25	17	6 15	British.	White Star Line.	500.3	63.4	27.0	Wellington.	Southampton.	General.	4,749	12,896	9,571	
Athens.	15	22 30	16	9 01	16	16 25	17	6 15	British.	White Star Line.	500.3	63.4	27.0	Wellington.	Southampton.	General.	4,749	12,896	9,571	

Pacific ¹	Atlantic	Caribbean	Chamorro	General	London	General	5,604	5,360	4,080
16 4 00	16 9 55	16 18 15	16 18 15	Swedish	Johnson Line	Vancouver	362 0	51 3	24 0
16 6 00	16 10 02	16 18 15	16 23 12	British	Pacific Steam Navigation Co.	Chamorro	450 0	33 0	12 9
16 12 30	16 13 35	16 20 45	18 12 05	British	Royal Mail Steam Packet Co.	Valparaiso	480 0	57 8	23 6
16 18 00	17 7 49	17 15 20	17 15 20	American	Atlantic, Gulf & Pac. S. S. Corp.	Seattle	404 0	53 9	21 6
16 23 00	17 8 48	17 16 38	18 3 05	American	N. Atlantic & Western S. S. Co.	Aberdeen	300 0	54 2	23 0
17 4 00	17 9 56	17 17 41	17 18 57	British	Pacific Steam Navigation Co.	Valparaiso	400 0	52 3	25 0
17 4 00	17 13 32	17 20 30	10 47	Chilean	Chilean Line	Talcahuano	378 0	44 0	19 0
17 19 30	18 6 46	18 14 30	18 16 30	British	South American Steamship Co.	Valparaiso	251 0	43 6	20 0
18 8 45	18 9 40	18 17 08	18 18 10	British	The S. S. Line, Ltd.	San Francisco	400 0	53 0	25 0
18 12 40	18 14 07	18 20 05	19 12 07	British	Anglo-Saxon Petroleum Co.	San Francisco	412 0	53 3	25 0
17 15 04	18 8 40	18 16 39	19 12 07	American	United States Navy	Batavia	435 0	36 2	30 0
17 22 30	19 7 07	19 14 28	19 14 28	American	Union Oil Company of California	Port San Louis	345 0	49 1	19 0
14 0 05	19 11 16	19 18 13	19 18 18	American	Chile Steamship Co.	Antofagasta	135 6	32 2	13 0
7 9 40	7 46	20 14 39	20 14 39	American	Carnegie Institute	Adia	401 8	52 2	23 6
19 13 55	20 8 40	20 16 15	20 16 15	American	Luckenbach Line	Oregon	380 3	50 0	26 0
20 4 00	20 9 31	20 17 20	19 15	British	Lawther Latta Co.	Portland	385 0	50 2	23 0
19 20 00	20 10 01	20 17 50	20 18 24	Spanish	Sota & Anzar Navigation Co.	Valparaiso	415 0	52 5	23 5
20 6 00	20 11 28	20 18 17	18 17	British	Pacific Steam Navigation Co.	San Francisco	405 0	41 5	15 0
20 0 25	20 13 17	20 21 35	20 12 00	American	Swayne & Hoyt	Coronel	461 6	59 1	25 9
21 1 35	21 8 02	21 15 30	21 15 15	British	Pacific Steam Navigation Co.	Liverpool	424 2	56 2	26 2
21 2 30	21 8 54	21 16 45	21 23 10	American	United States Steel Products Co.	Seattle	402 5	53 0	26 8
21 8 30	21 9 52	21 17 50	22 13 20	American	Struthers & Dixon (S. B.)	San Francisco	496 0	68 0	25 0
21 15 40	22 6 48	22 14 45	22 14 45	American	Luckenbach Line	Tacoma	175 0	16 4	
9-19 15 49	22 7 03	22 14 42		American	United States Navy	Batavia	410 0	55 2	23 0
21 21 00	22 7 51	22 15 20	22 18 20	Danish	East Asiatic Steamship Co.	Valparaiso	407 5	50 3	22 6
22 6 00	22 9 58	22 17 36	22 17 36	Japanese	Osaka Shosen Kaisha	Singapore	460 0	57 0	25 0
20 21 45	22 13 54	22 21 36	22 21 36	American	Luckenbach Line	Vancouver			

* Motor schooner.

* Yacht.

* Submarine.

* For orders.

* Lumber, shingles and laths.

* Lumber and dynamite.

* Barley, canned fruits, flour, and salmon.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.

Date.	Vessel.	From—	Date.	Vessel.	Line.	For—
October 16.	Abangarez	United Fruit Co.	October 16.	Cristobal	Panama Railroad Steamship Line.	Norfolk.
October 16.	Manuel Calvo	Cia Transatlantica	October 16.	Abangarez	United Fruit Co.	Bocas del Toro.
October 16.	Colon	Panama Railroad Steamship Line.	October 17.	Gen. W. C. Gorgas	Panama Railroad Steamship Line.	New York via Haitian ports
October 17.	Herbert G. Wylie.	Pan-American Pet. Trans. Co.	October 17.	Manuel Calvo	Cia Transatlantica	Ponce, Porto Rico.
October 17.	Parishina	United Fruit Co.	October 18.	Herbert G. Wylie.	Pan-American Pet. Trans. Co.	Tampanco.
October 17.	Caribbean	Panama Railroad Cattle Industry.	October 18.	Calamarez	United Fruit Co.	New York via Port Limon.
October 18.	Calamarez	United Fruit Co.	October 19.	Abangarez	United Fruit Co.	New Orleans.
October 18.	Van Rensselaer	Royal Netherlands W. I. Mail	October 19.	Van Rensselaer	Royal Netherlands W. I. Mail	Port Limon.
October 19.	Abangarez	United Fruit Co.				

(Continued on page 184, column 2.)

Status of The Panama Canal in Accepting Agencies for Steamships.

THE PANAMA CANAL,
DEPARTMENT OF OPERATION AND MAINTENANCE,
BALBOA HEIGHTS, C. Z., October 19, 1921.

MEMORANDUM FOR ALL STEAMSHIP AGENTS:

The Marine Superintendent is in receipt of inquiries from steamship agents with regard to the status of The Panama Canal in accepting agencies for steamships.

The Panama Canal is at all times ready to act as agent for steamships that do not maintain agents on the Isthmus, in which case the offices of the Port Captain at the terminal ports become *ex officio* steamship offices and stand ready to meet the requirements and render assistance to shipmasters, the controlling idea being the care for shipping which on account of any circumstance does not consider an agency necessary.

It is, of course, understood that no official of The Panama Canal is appointed as agent in the way in which the term is ordinarily used, and no official of The Panama Canal is permitted to receive any compensation for such activity as is entailed on the part of The Panama Canal as steamship agent.

E. P. JESSOP,
Marine Superintendent.

Quick Discharge of Cargo at Canal Piers by Vessels in Transit.

The possibility of vessels in through service handling small transfer shipments of cargo at the Canal piers without much delay was exemplified by the steamer *Cape Henry* on October 17. The vessel passed between the breakwaters at the Atlantic entrance at 9.32 a. m. and 43 minutes later (10.15 a. m.) was tied up alongside the pier at Cristobal. She discharged 1,434 barrels of sulphate of alum, containing 294 tons, consigned to The Panama Canal, and left the pier at 1.11 p. m., having been at dock slightly less than 3 hours. The vessel then started through the Canal and passed the outer buoy in the Pacific at 8.40 p. m.

The *Cape Henry* is operated by the Atlantic, Gulf and Pacific Line and was bound from New York to Los Angeles. The stevedoring was performed by a force employed by the local agent of the line, which was assisted by the regular forces of the Panama Railroad Company on the piers, working through the noon hour in receiving and checking the cargo.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended October 22:

Steamships *La Valley*, dock, stage, and clean bottom; scale hull and paint bottom; remove wood block and chock at stem; renew 1 section of forward bulwark plating; 1 section of bottom angle on port side, after end and all of forward bulwark plating and bottom angles on starboard side; install new channel iron rail on forward bulwarks, port and starboard; reenforce bulwarks with 3 plate brackets and 1 stanchion on each side, securing same to bulwarks and deck with rivets; patch plate, starboard side forward, in wake of plate bracket for bulwark; fair up after bulwarks in place and renew bead iron on ends of same; remove wood rail and install new channel iron rail and reenforce bulwarks in wake of chocks with plate brackets, securing to bulwark plating with rivets; renew top and bottom angles, starboard side forward; renew bottom angles, port side forward and around stern; straighten balance of angles; weld all holes through shell in wake of wood fender; patch shell plate on starboard side forward; renew upper wood fender, port and starboard, and secure with vertical fastenings; renew lower wood fender, starboard side forward, and install chafing iron; refasten chafing iron on lower fender where spikes are missing; *Republic*, dock, stage, clean and paint bottom; remove broken propeller and install spare propeller furnished by ship; remove strainers and clean and paint sea chest; file face of tail shaft coupling; repair coupling bolts; plane propeller key; face disk of sea valve; manufacture countersunk screws; *Iwah Ping*, manufacture and install 44 wood bunks, and change location of 22; *Katrina Luckenbach*, renew 25 boiler tubes;

drill barge *Teredo No. 2*, dock, stage, and clean; scale and paint bottom to light load line; barge *No. 148*, dock, stage, and clean; scale and paint bottom to light load line.

PREVIOUSLY REPORTED.

Launch *Pacific*, general repairs to hull; steamship *Panama*, reboiling and general overhaul to machinery and hull; launch *Wilson B. Gaither*, scrape and clean bottom; perform general hull repairs, survey vessel *Carnegie*, dock, stage, and clean bottom; perform miscellaneous propeller repairs.

The following vessels were at the Cristobal shops for repairs during the week ended October 24:

Steamship *Allianca*, install drain line in boat deck heaters and test out heating system; tug *Tavernilla*, install section of fire hose, grind and reseat safety valves; steamships *Achilles*, remove link in anchor chain next to anchor shackle; furnish 2 stove plates; retin 6 pots; furnish 6 laborers and foreman for cleaning tubes and scaling boilers; barge *No. 123*, dock and undock, clean, scale, and paint; *Georgia*, electric weld No. 1 boiler; *Caribbean*, renew crosshead pin and brasses of No. 2 dynamo; manufacture 1 new spring as sample for No. 1 dynamo; make necessary repairs to forward winch; make pipe repairs as directed by chief engineer; *Salvador*, *Acajulla*, *Parismina*, *Steel Exporter*, and *Sarpfos*, launches *Atlantic* and *Hibiscus*, minor repairs.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending October 22, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Ebro.....	Pacific Steam Navigation Co.....	October 16.....	October 16.....		28
Abangarez.....	United Fruit Co.....	October 16.....	October 16.....	(¹)	85
Acajutla.....	Pacific Steam Navigation Co.....	October 16.....	October 17.....	92	
Esequibo.....	Pacific Steam Navigation Co.....	October 16.....	October 17.....	6	500
Manuel Calvo.....	Spanish Line.....	October 16.....	October 17.....	171	328
Helder.....	Royal Netherlands W. I. Mail.....	October 16.....	October 17.....		288½
Colon.....	Panama Railroad Steamship Line.....	October 16.....	October 21.....	1,394	1,350
Parismina.....	United Fruit Co.....	October 17.....	October 20.....	449	332
Herbert G. Wylie.....	Pan-American Petroleum Co.....	October 17.....	October 18.....	2,579	(¹)
Cape Henry.....	Atl. Gulf & Pacific Steamship Co.....	October 17.....	October 17.....	275	(²)
Caribbean.....	Panama Railroad Cattle Industry.....	October 17.....	October 20.....	800	160
Huasco.....	Chilean Line.....	October 17.....	October 20.....	810	515
Georgie.....	French Line.....	October 18.....		18	
Urubamba.....	Peruvian Line.....		October 18.....		230
Van Rensselaer.....	Royal Netherlands W. I. Mail.....	October 18.....	October 19.....	13	(²)
Abangarez.....	United Fruit Co.....	October 19.....	October 19.....	10	4
Calamares.....	United Fruit Co.....	October 18.....	October 19.....	312	163
Tivives.....	United Fruit Co.....	October 19.....	October 20.....	101	101
Turrialba.....	United Fruit Co.....	October 20.....	October 20.....	78	½
Achilles.....	Panama Railroad Steamship Line.....	October 20.....		12,008	
Alexandrian.....	Leyland Line.....	October 20.....	October 22.....	492	716
Jamaica.....	Pacific Steam Navigation Co.....	October 20.....		33	
Van Rensselaer.....	Royal Netherlands W. I. Mail.....	October 21.....	October 21.....	20	226
Haiti.....	French Line.....	October 21.....		15	
San Pablo.....	United Fruit Co.....	October 22.....	October 22.....	10	(²)
Salvador.....	Pacific Steam Navigation Co.....	October 22.....	October 22.....		243

* No cargo discharged.

* No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending October 22, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Hwah Ping.....	Chungwa Steamship Co.....	October 18.....	October 20.....	147	30
Mensabe.....	Pacific Metals Transportation Co.....	October 18.....	October 20.....		58
Huasco.....	South American Steamship Co.....	October 21.....	October 21.....	74	96
Salvador.....	Pacific Steam Navigation Co.....	October 22.....	October 22.....		6
Colombia.....	Pacific Mail Steamship Co.....	October 22.....	October 23.....	280	
Jamaica.....	Pacific Steam Navigation Co.....	October 23.....	October 23.....		27

Current Net Prices on Coal and Fuel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Price of Commissary Supplies.

Coffee, Commissary Special, lb. \$0.23
Sugar, finest, highly refined, States granulated:

25-lb. sack. 1.45
5-lb. sack.37
Lima beans, lb.07
Spinach, 10-lb. tin.66
Apples, 10-lb. tin.69
Sweet potatoes, 10-lb. tin.78
Navy beans, lb.05
Roast beef, 6-lb. tin. 1.90
Boiled beef, 6-lb. tin. 1.50
Salad oil, 24-oz. bot.33

Beef, hind quarters, lb.21
Beef, fore quarters, lb. 13½
Square chuck with prime ribs, lb. 16
Ribs, lb.17
Short loins, lb.30
Pork carcasses, lb.24
Lamb carcasses, lb.34
Mutton carcasses, lb.25
Veal carcasses, lb.34

Bananas, doz.06
Bananas, hand.07
Coconuts, ea.04
Grapefruit, graded.03, .05, .07
Oranges, select Costa Rican.03, .04
Carrots, lb.05½
Turnips, lb.06
Pickles, bulk, gal. 1.40
Soap, brown laundry, cake.07
Tea, English Breakfast, lb.39
Soup, Campbell's, assorted, tin.13
Rice, lb.05
Jams, all flavors, 1-lb. tin.29
Peaches, 10-lb. tin. 1.40
Condensed milk, case (48) 7.20
Evaporated milk, case (48) 5.76
Ketchup, pint bottle.30
Vinegar, cider, large bottle.25

Bacon, States', lb.48
Ham, sugar cured, lb.39
Corned beef, lb.20
Standard mess pork, lb.24
Lard compound.17
Oleomargarine, 5-lb. tin. 1.35
Yeast, lb.44
Pork sausage, lb.29

States' potatoes.05½
Lettuce, lb.08
Onions, lb.07
Oranges, doz. (tropical).30
Cabbage, lb.06
Butter, Creamery Special, in tubs, lb.59
Eggs, States', Firsts, doz.65

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 181.

PORT OF CRISTOBAL.—continued.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
October 19.	Twives.	United Fruit Co.	October 20.	Caribbean.	Panama Railroad Cattle Industry.
October 20.	Achilles.	Panama Railroad Steamship Line.	October 20.	Twives.	United Fruit Co.
October 20.	Turrialba.	United Fruit Co.	October 20.	Turrialba.	United Fruit Co.
October 20.	Ampat No. 4.	Curacao Shipping Co.	October 20.	Paraisma.	United Fruit Co.
October 20.	Alexandrian.	Leyland Line.	October 21.	Colon.	Panama Railroad Steamship Line.
October 21.	Van Rensselaer.	Royal Netherlands W. I. Mail.	October 21.	Van Rensselaer.	Royal Netherlands W. I. Mail.
October 21.	Haiti.	French Line.	October 22.	San Pablo.	United Fruit Co.
October 22.	San Pablo.	United Fruit Co.	October 22.	Achilles.	Panama Railroad Steamship Line.
October 22.	St. Michel.	United States Army.			
9 Transport.			PORT OF BALBOA.		
October 18.	Mensabe.	Choco Pacific-American Co.	October 20.	Mensabe.	Choco Pacific-American Co.
October 18.	Hwah Ping.	Chinese Government.	October 20.	Hwah Ping.	Chinese Government.
					Buenaventura. Hongkong.

*Other than ships passing through the Canal.

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Volume XV. Balboa Heights, C. Z., November 2, 1921. No. 12.

Quantity of Bunker Coal Allowed Under Ballast Rates of Tolls.

Inquiries are received from time to time as to the quantity of bunker coal which a ship, in ballast, carrying neither cargo nor passengers, may carry through the Panama Canal under the ballast rate for tolls.

The following is quoted from the *Rules and Regulations for the Operation and Navigation of the Panama Canal*:

Amount of Coal Allowed Vessels in Ballast—Articles XIII and XIV of the Rules for the Measurement of Vessels for the Panama Canal, set forth what space may be used for carrying coal and other fuel for a vessel's own use without payment of tolls for the space so occupied.

The rules are liberal in making ample provision for such space and authorize the owner of the vessel to select either of the two provisions that he may elect as set forth in the rules. Full tolls are levied on loaded vessels and reduced tolls on those in ballast, and in order that there may be no misunderstanding vessels will be considered *in ballast* only when they carry no passengers and do not carry either coal or merchandise of any description in any quantity whatsoever except bunker coal or other fuel for their own use. In order that they may be entitled to claim the reduced or *ballast rate* the amount of bunker coal or other fuel must not exceed in volume the allowance specified in The Panama Canal certificate as the deduction for bunker space. For convenience this allowance for volume is expressed in long tons weight at the bottom of page 2, on all certificates issued, checked, or corrected at the Canal.

In any case in which the amount of coal on board exceeds the deductible allowance, the vessel will be charged full tolls.

In any case in which coal be carried as a deck load, for the vessel's own consumption, or even though it be within the deductible allowance it will be subject to measurement and charge, the rate depending upon whether or not the vessel be considered in ballast or loaded.

If when carrying a deck load of coal for her own use she carries no passengers or freight, and the amount of coal on board be within the deductible allowance, she may be considered in ballast.

Vessels that wish to benefit by the reduced or ballast rate of tolls should be very careful not to carry more than the deductible allowance under the rules.

On arrival, vessels, claiming to be in ballast must have ready a statement of their coal account, to which the master may be required to take oath. In case coal be carried outside of the regular bunkers, both it and that carried in the bunkers should be piled or arranged in a fairly uniform way so that it may be readily measured.

The bunker allowance, referred to in the foregoing, is arrived at by this rule: Take three-fourths of the total volume of space of engine and boiler rooms, in cubic feet, and divide this number by 40 in the case of coal, 37.7 in the case of oil; the result is the number of long tons (2,240 pounds) allowed as bunkers. For example, if a vessel had a total of 80,000 cubic feet in engine and boiler rooms, three-fourths would be 60,000; divided by 40 would give 1,500, the number of long tons of coal, divided by 37.7 would give 1,592 (to nearest ton), the number of long tons of oil, allowed as bunkers.

Parlor Car Service.

Effective at close of business on October 31, 1921, parlor car service was discontinued on all regular Panama Railroad passenger trains.

Chair cars will be available for use on steamer trains and for other special service.

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, October 29, 1921.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	To—	Cargo.	Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.									Tons.	Net.
Anacapa	16	18	15	23	6	12	23	14	00	23	215.0	33.0	15.9	Cristobal	Champerico	General	984	1,273
Jamaica	20	11	10	23	6	00	23	14	02	23	220.0	34.0	13.8	Pto. Colombia	Tumaco	Salt and general	525	1,187
Georgia	18	9	00	23	7	30	23	16	22	23	422.0	52.0	20.0	Havre	Guayaquil	General	104	6,880
Waser Cobelia	22	21	26	23	8	45	23	17	15	26	411.0	54.0	20.0	Baltimore	Seattle	Coal	4,876	6,022
Elizabet	23	1	35	23	9	35	23	17	16	23	246.0	42.0	20.6	New Orleans	Seattle	General	2,600	2,439
Hoekak Maru	23	9	20	23	10	27	23	18	15	23	370.0	50.0	18.2	Swansea	Portland, Ore.	Ballast	4,823	3,462
Paraguet	24	6	20	24	6	20	24	14	15	24	156.0	24.0	15.0	Cristobal	Balboa	General	4,997	5,659
Pallas	24	12	01	24	6	45	24	14	21	24	380.0	53.0	23.8	Buenos Aires	San Francisco	Coffee, general	7,643	5,562
Pilar de Larrinaga	24	12	01	24	7	45	24	15	02	24	445.0	58.0	19.0	Immingham	Astoria	Ballast	1,548	6,014
Princesa	23	16	46	24	10	06	24	16	51	24	390.0	50.0	20.0	Liverpool	Valparaiso	General	7,800	7,539
Cherifanoga	25	14	03	26	6	19	26	14	17	26	424.0	56.0	26.0	New Orleans	Yokohama	General	4,769	7,016
City	28	10	05	28	10	35	28	16	00	28	420.0	54.0	25.6	Montreal	New Zealand	General	5,863	6,909
Sussex	26	10	35	26	11	00	26	18	43	26	425.0	54.0	25.0	New York	Portland	General	7,070	7,539
Yuri Maru	26	18	30	27	6	19	27	14	10	27	424.0	56.0	25.0	Baltimore	Tokio	General	6,500	8,562
Tuscaloosa City	26	18	55	27	7	15	27	15	01	27	446.0	56.0	24.5	Philadelphia	San Francisco	General	3,600	9,154
K. I. Luckenbach	27	8	32	27	9	05	27	16	02	27	471.0	57.0	19.8	New York	Los Angeles	General	3,600	9,154
Texas	27	11	15	27	12	18	27	19	35	28	198.0	32.0	12.0	Rotterdam	Valparaiso	Ballast	1,330	4,145
Sonraep	26	17	08	28	6	09	28	14	18	29	363.0	48.0	14.6	Hamburg	Guayaquil	General	5,869	4,286
Ulysses	27	14	33	28	7	25	28	15	10	29	400.0	53.0	15.0	Cardiff	Portland, Ore.	Ballast	7,070	7,382
Yavoi Maru	27	17	25	28	8	55	28	15	50	28	425.0	52.0	22.6	Antwerp	Los Angeles	General	7,070	7,382
Chile	27	17	25	28	8	55	28	15	50	28	425.0	52.0	22.6	Antwerp	Los Angeles	General	7,070	7,382
George Washington	27	20	57	28	9	20	28	16	41	28	444.0	56.0	17.0	Antwerp	Los Angeles	General	3,800	7,505
Hualaga	23	15	41	28	11	06	28	18	07	28	360.0	45.0	21.0	Cristobal	Mollendo	General	402	4,514
Agridale	22	12	06	29	6	34	29	14	00	29	370.0	53.0	25.8	New Orleans	Seattle	General	5,932	5,932
S. C. 284	29	6	40	29	6	50	29	11	55	29	254.0	39.0	14.0	Cristobal	Balboa	General	55	2,036
Granfos	29	1	30	29	11	43	29	18	38	29	381.0	49.0	22.8	New York	Guayaquil	General	2,200	5,926
Equador	29	6	20	29	12	52	29	19	27	30	475.0	56.0	23.6	Baltimore	San Francisco	General	7,062	9,530
Westmeath	29	13	00	29	13	10	29	21	09	29	475.0	56.0	23.6	London	Auckland	General, explosives	7,062	9,530

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Motor ship.

Ship.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	To—	Cargo.	Tons.	Gross.	Net.
Tug.																											
Columbia	22	14	21	23	6	46	23	14	07	24	12	04	24	12	04	24	American	Pacific Mail Steamship Co.	380.0	48.7	24.2	San Francisco	Baltimore	General	2,330	6,015	4,281
Hualaga	23	6	25	23	8	24	23	15	41	24	11	06	24	11	06	24	Peruvian	Peruvian Steamship Co.	360.0	44.7	21.6	Callao	Cristobal	General	1,910	4,514	2,386
Torobashi	23	5	30	23	9	25	23	16	57	23	16	57	23	16	57	23	Japanese	Nippon Yusen Kaisha	445.0	58.0	24.4	Yokohama	London	Canned salmon.	10,806	7,685	5,529
Oriana	23	12	08	23	13	47	23	20	30	24	18	05	24	18	05	24	British	Pacific Steam Navigation Co.	465.7	56.2	24.5	Coronel	Liverpool	(³)	4,097	8,620	5,345

Cotton, metals, and oil cake.

West Wind.	23	16	20	24	6	43	34	15	45	37	11	29	American	U. S. and Australian Line (S. B.)	410	0	54	2	18	0	Wellington.	Boston	General.	2,300 ¹	6,613	4,938
Ledigh.	23	17	47	24	7	46	24	14	38	24	14	38	American	N. A. & West. S. S. Co. (S. B.)	300	0	54	2	18	6	Portland, Oreg.	Portland, Me	General.	1,625	6,105	4,343
Santa Teresa	24	0	30	24	9	03	24	15	32	24	22	09	American	W. R. Grace & Co.	300	0	54	2	18	6	Tacalmayo	New York	General.	2,376	5,726	4,086
West Greylock	24	0	45	24	9	39	24	17	40	29	11	49	American	Williams-Diamond Co. (S. B.)	430	7	54	0	27	8	Bellingham	Antwerp	General.	8,100	7,946	5,698
Sarplos	24	10	10	24	10	50	24	18	30	35	19	42	Norwegian.	Thor. Thoresen	254	8	39	0	15	0	Guayaquil.	New York	Coffee, cocoa, etc	8,904	2,064	1,479
Abworth	23	14	00	24	11	50	24	19	41	24	19	41	British	R. S. Durdish	400	0	52	3	25	0	Cork	Cork	Wheat.	7,258	5,732	3,991
Saint Andre.	24	14	30	25	6	35	25	15	08	27	16	23	French	Cie. Gie. Transatlantique	397	9	48	0	22	0	Tacalmayo.	La Havre.	(¹)	4,250	5,917	4,145
Cedric.	24	20	15	25	7	46	25	16	01	25	17	01	Norwegian.	Det. Schmerske Rederi	338	5	50	3	22	0	Tacalmayo.	Hamburg.	Nitrate, general.	5,450	4,113	3,071
Laura C. Hall.	25	9	55	26	6	20	26	15	12	27	16	25	British	Pacific Metals Corporation	81	0	25	0	10	0	Buenaventura.	Cristobal	Coffee, platinum.	8,995	7,740	5,705
Tactician.	25	21	00	26	7	55	26	15	12	27	16	25	British	Tosio & James Harrison	370	0	56	8	26	6	San Diego	London	General.	7,400	6,105	4,355
Minnequa.	26	4	00	26	8	34	26	16	40	26	18	40	American	Wessel-Duval (S. B.)	390	5	54	2	26	0	Toopilla	Baltimore	Nitrate.	7,700	5,682	4,229
Liverpool Maru	26	8	00	26	9	37	26	16	05	26	19	15	British	W. K. Smith & Co.	396	5	53	5	24	6	Portland.	Hull	Wheat	7,653	5,919	4,400
Orion City	26	8	15	26	10	26	26	18	40	26	18	40	American.	Kokusai Kisen Kabushiki Kaisha	385	0	51	0	26	0	Kobe	New York.	General	5,356	6,841	4,816
Bellflower	26	19	40	27	6	26	27	14	40	27	14	40	British	Barber Lines (S. B.)	385	0	51	0	26	0	Portland.	New York.	Nitrate.	7,500	8,236	6,256
Kumier.	26	19	00	27	8	01	27	15	41	27	16	38	British	Andrew Weir & Co.	460	0	55	1	27	0	Toopilla	Alexandria.	Nitrate.	2,438	3,228	2,010
Garfield	26	21	00	27	8	35	27	15	41	27	16	38	American	Grace Line, Inc.	400	0	51	3	24	0	Valparaiso	New York.	Nitrate.	6,217	5,374	3,783
Ravenrook	27	8	15	27	8	35	27	15	41	27	16	38	British	Orient Steamship Co.	360	2	51	2	23	0	Portland.	Hampton Rds.	Barley	5,965	4,670	3,303
Natal	27	8	15	27	10	38	27	18	30	27	22	30	British	Pacific Steam Navigation Co.	400	0	51	3	24	0	San Francisco	Copenhagen.	General	5,963	4,670	3,303
Manavi.	27	10	50	27	11	52	27	19	42	27	20	55	Danish	Ben Line Steamers, Ltd	405	0	51	2	23	0	Guayaquil	Cristobal.	General	6,587	5,097	3,476
Benrinas	27	10	50	27	12	57	27	20	00	27	21	00	British	Choco Pacific-Amer. Co	405	0	51	2	23	0	Portland.	Venice	Wheat	6,587	5,097	3,476
Patuxent.	21	15	28	29	6	44	29	13	45	29	13	45	Panaman.	United States Navy	102	6	24	0	11	0	Sea	Cristobal	General	6,587	5,097	3,476
Mensabe	28	23	09	29	10	02	29	16	07	29	16	07	American	United States Navy	156	0	24	0	15	0	Cape Mala.	Cristobal	General	6,587	5,097	3,476

* For orders.

s Cotton, beans, and skins.

* Wheat, barley, dried fruit, and cottonseed cake.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
October 23.	Metapan.	United Fruit Co.	New Orleans.	October 23.	Metapan.	United Fruit Co.	Bocas del Toro.
October 23.	S. M. Spalding.	Pan-Amer. Pet. and Transp. Co.	Tampico.	October 23.	Alexandrian	Levyland Line.	Mobile.
October 24.	Heredia.	Panama Railroad Steamship Line.	New York via Haiti.	October 24.	Haiti.	French Line.	Saint Nazaire via Puerto Colombia.
October 25.	Metapan.	United Fruit Co.	New Orleans.	October 25.	S. M. Spalding.	Pan-Amer. Pet. and Transp. Co.	Tampico.
October 26.	Caribbean.	United Fruit Co.	Bocas del Toro.	October 25.	St. Michel.	United States Government.	New York.
October 26.	Presidente Sarmiento.	Panama Railroad Cattle Industry.	Habana.	October 26.	Metapan.	United Fruit Co.	New Orleans.
October 27.	Grelsa.	Argentine Government	Port Limon.	October 26.	Heredia.	United Fruit Co.	New Orleans via Bocas del Toro.
October 28.	Pastores.	Gould Steamship Industrial Co.	New York via Habana.	October 28.	Alliance.	Panama Railroad Steamship Line.	New York.
October 29.	Camito.	United Fruit Co.	Port Limon.	October 28.	Pastores.	United Fruit Co.	New York via Port Limon.
October 29.		Elders & Fyffes, Ltd.		October 29.	Camito.	Elders & Fyffes, Ltd.	Kingston.
				October 29.	Caribbean.	Panama Railroad Cattle Industry.	Puerto Colombia.

PORT OF BALBOA.

Date.	Vessel.	Line.	From—
October 27.	Taiho Maru.	Kokusai Kisen Kabushiki Kaisha.	Callao.
October 27.	Taiho Maru.	Tacoma.	Kokusai Kisen Kabushiki Kaisha.

* Other than ships passing through the Canal.

Cash Balance in Appropriations, September, 1921.

BALBOA HEIGHTS, C. Z., October 29, 1921.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: Herewith is a report showing the commissary sales, financial receipts and expenditures, and of the cash balance available in The Panama Canal appropriations for the month of September, 1921, as compared with the preceding month, and with the corresponding month of last year:

	September, 1921.	August, 1921.	September, 1920.
Cash balance available for expenditure:			
In Canal appropriations.....	\$13,194,484.17	\$13,754,717.93	\$17,453,227.75
Payments made from appropriations:			
By Paymaster on the Isthmus.....	1,138,288.01	1,139,592.07	1,720,992.08
By Disbursing Clerk, Washington, D. C. To the Panama Railroad Company (for commissary books).....	289,114.62	334,921.39	655,886.44
.....	217,855.02	224,170.75	368,653.07
Collections on the Isthmus:			
Repaid to appropriations.....	743,231.35	807,211.41	633,022.48
Commissary and other trust funds.....	219,523.57	225,572.23	371,229.35
Tolls.....	892,004.99	955,404.98	1,003,531.38
Sales of water.....	6,526.35	2,240.65	
Postal receipts.....	9,422.48	8,818.81	10,253.35
Licenses, taxes, court fees, fines, etc.....	2,995.67	3,250.24	4,218.20
Sales of obsolete material.....		100.00	2,026.40
Total collections on Isthmus.....	1,873,704.41	2,002,598.32	2,024,281.16
Collections by Disbursing Clerk, Washington.....	17,710.65	2,133.07	30,441.52
Deposits with Assistant Treasurer, United States.....	63,800.00	68,000.00	62,200.00
Canal Zone and miscellaneous funds:			
Receipts—			
Money order funds.....	112,226.12	100,961.93	131,929.46
Clubhouse funds.....	30,372.67	35,698.27	32,126.54
Interest.....	1,685.31	1,505.79	
Trust funds.....	865.85	401.50	2,894.00
Total receipts.....	145,149.95	138,567.49	166,950.00
Disbursements—			
Money order funds.....	194,900.00	195,525.14	176,610.00
Clubhouse funds.....	31,964.56	33,219.65	31,408.64
Interest.....	729.95	1,024.84	651.84
Trust funds.....	1,483.22	1,351.47	
Total disbursements.....	229,077.73	231,121.10	208,670.48
Pay roll on the Isthmus:			
Maintenance and operation.....	738,039.99	817,464.84	1,226,025.28
Sanitation.....	76,484.55	81,278.61	81,055.70
Civil Government.....	51,179.77	51,695.94	51,396.66
Total.....	865,704.31	950,439.39	1,358,477.64
Requisitions for purchases in the United States.....	45,761.19	42,797.44	689,920.65
Sales of commissary supplies:			
To The Panama Canal.....	89,607.78	100,250.39	126,391.28
To steamships, other than those of the United States Government and Panama Railroad Steamship Line.....	24,164.05	30,960.06	108,767.28
To Panama Railroad, including its steamships, and Hotel Washington.....	16,365.64	19,356.96	33,342.86
To the United States Government, including the Army and Navy.....	107,729.74	178,585.33	119,448.52
To individuals and companies through charge accounts.....	20,478.68	21,835.81	22,973.55
To individuals purchasing coupons.....	329,571.42	370,094.79	549,850.11
Total.....	587,917.31	721,083.34	960,773.60

* Balance on last day of month.

Respectfully,

M. L. WALKER,
Acting Governor.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States "Pancanal, Washington."

Heavy Shipments from the Pacific Coast to Europe.

There has been an unusually heavy movement of cargo from the west coast of the United States to Europe during the quarter ending September 30, 1921, aggregating 573,083 tons, as compared with 243,374 tons during the corresponding quarter of 1920. Wheat and barley contributed the bulk of this tonnage.

The cargo moving in the opposite direction from Europe to the west coast of the United States amounted to 32,985 tons, as compared with 37,572 tons in the corresponding quarter of the previous year.

American-Hawaiian Vessels in European-Pacific Line Service.

Preliminary announcement that the service known as the European-Pacific Line will be operated with the American-Hawaiian Steamship Company's own steamers, beginning in October, was published in THE PANAMA CANAL RECORD of August 31. Later statements from the company announce the first sailing in the new schedule as that of the steamship *Floridian*, leaving San Francisco about October 23 for Havre, London, Hamburg, Antwerp, and Liverpool. The next vessel out in the service is to be the *Pennsylvanian*, sailing about November 19 from Tacoma, Seattle, Portland, San Francisco, and Los Angeles for Liverpool, Glasgow, Hamburg, Antwerp, and London.

Shipments of Eggs.

Eggs, fresh, frozen and dried, aggregating 3,448 tons, made up the greater part of the 4,392 tons of cargo aboard the Blue Star Line steamship *Gothic Star*, passing through the Canal on October 4, on the way from Chinese ports, via San Francisco, to New York and London. Ninety-four tons of frozen eggs were shipped from San Francisco to London, and 465 tons of fresh eggs, from Nanking and Shanghai, were bound for London. New York was the destination of 2,625 tons of frozen and 264 tons of dried eggs, shipped from Hankow and Nanking.

On November 4 of last year the *Tuscan Star* of the same line carried a whole cargo of 6,200 tons of frozen eggs, through the Canal on the way from Chinese ports to New York.

In September, 1921, a shipment of 29 tons of eggs in cold storage, was carried through the Canal on the steamship *Henry S. Grove*, from Pacific ports of the United States to north Atlantic ports of the United States.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended October 29:

Steamship *West Cahokia*, remove high-pressure piston rod; true up and reinstall same; run line through H. P. cylinder and check alignment with crosshead; refit H. P. crosshead brasses; furnish 1 set of packing for H. P. piston rod; braze 5 leaking journal bearing oil cups; renew suction and discharge valve collars in line bilge pump; weld 1 coil in Cohn oil heater; dredge No. 84, renew rivets in ladder; renew wearing ring on ladder head; manufacture and install keeper for ladder head packing gland; refasten casting at gooseneck; ream hole in coupling on cutter; take a cut off valve seat and grind in new valves on salt water pump; U. S. S. *Ashville*, manufacture bushings and spiral pinion shaft.

PREVIOUSLY REPORTED.

Launch *Wilson B. Gaither*, scrape and clean bottom; perform general hull repairs; barge No. 138, dock, stage, and clean; scale and paint bottom to light load line;

drill boat *Teredo No. 2*, dock, stage, and clean; scale and paint bottom to light load line; launch *Pacific*, general repairs to hull; steamships *La Valley*, dock, stage, and clean bottom; perform miscellaneous hull and fender repairs; *Panama*, reboiling and general repairs to machinery and hull.

The following vessels were at the Cristobal shops for repairs during the week ended October 31:

Steamships *West Greylock*, remove H. P. piston and rod; check alignment of cylinder and crosshead; manufacture 1 set of H. P. rings; *Huallaga*, electric weld inboard ends of hawse pipes; *West Wind*, rebore auxiliary feed pump valve chamber and install new rings; remetal and machine spare crank brasses for dynamo; install spare armature; patch filter box; *Caribbean*, overhaul injector; repair dynamo and forward winch; *Argyll*, manufacture, fit, and install 1 hand steering wheel; renew wedges around mainmast; repair steam pipe to winch; blank off and plug 4 holes in ship's side; *Ampat*, manufacture, fit, and install new rudder; install asbestos lining on boilers, install inside row of tubes in both boilers; repair sea valves, etc.; tug *Mensabe*, dock; calk hull planking; renew section of keel, repair rudder, etc.; motor schooner *Laura C. Hall*, dock; examine strut bearing; install 2 knees under beams in ship's hold; manufacture and install lead pipe scuppers; make strainer; clean and paint bottom, etc.; steamship *Heredia*, launches *Esperanza*, *Wilhelm*, and *Mary B*, minor repairs.

PREVIOUSLY REPORTED.

Steamships *Balboa*, renew lagging and jacket on boiler where necessary, etc.; *Allianca*, test out heating system; launch *Gloriana*, dock; repair hull, awnings, engines, etc.; barge *No. 123*, dock; clean, scale, and paint.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending October 29, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Acajutla.....	Pacific Steam Navigation Co.....	October 23.....	October 23.....		987
Jamaica.....	Pacific Steam Navigation Co.....	October 23.....	October 23.....		48
Metapan.....	United Fruit Co.....	October 23.....	October 23.....	(¹)	4
Duendes.....	Pacific Steam Navigation Co.....	October 23.....	October 24.....	(¹)	34
Colombia.....	Pacific Mail Steamship Co.....	October 23.....	October 24.....	179	(²)
Haiti.....	French Line.....	October 23.....	October 24.....		483
S. M. Spalding.....	Pan-Amer. Pet. and Transp. Co.....	October 23.....	October 25.....	9,500	(²)
Huallaga.....	Peruvian Line.....	October 23.....	October 28.....	1,914	403
Sarpfos.....	Caribbean Steamship Co.....	October 24.....	October 25.....	158	
Allianca.....	Panama Railroad Steamship Line.....	October 24.....	October 28.....	1,320	1,378
Saint Andre.....	French Line.....	October 25.....	October 27.....		139
Heredia.....	United Fruit Co.....	October 25.....	October 27.....	849	39
Caribbean.....	Panama Railroad Steamship Line.....	October 26.....	October 29.....	680	82
Metapan.....	United Fruit Co.....	October 26.....	October 26.....		2
Ulysses.....	Royal Netherlands W. I. Mail.....	October 26.....	October 28.....	289	(²)
Laura C. Hall.....	Pacific Metals Corporation.....	October 26.....	October 26.....	61	
Tactician.....	Harrison Line.....	October 26.....	October 27.....	(¹)	237
Grelrosa.....	Pacific Steam Navigation Co.....	October 27.....	October 27.....	50	
Manavi.....	Pacific Steam Navigation Co.....	October 27.....	October 27.....	436	
Chile.....	East Asiatic Co.....	October 27.....	October 28.....	134	1
Pastores.....	United Fruit Co.....	October 28.....	October 28.....	243	58
Camito.....	Elders & Fyffes, Ltd.....	October 29.....	October 29.....	50	
Granfos.....	Caribbean Steamship Line.....	October 29.....	October 29.....	137	(²)
Ecuador.....	Pacific Mail Steamship Co.....	October 29.....	October 29.....	160	51
Gen. G. W. Goethals.....	Panama Railroad Steamship Line.....	October 29.....	October 29.....	969	

¹ No cargo discharged.

² No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending October 29, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Jamaica.....	Pacific Steam Navigation Co.....	October 23.....	October 23.....		25
Mamivi.....	Pacific Steam Navigation Co.....	October 27.....	October 27.....	6	
Ecuador.....	Pacific Mail Steamship Co.....	October 29.....	October 29.....	2	0

DEC 1 1921

THE PANAMA CANAL RECORD

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Volume XV. Balboa Heights, C. Z., November 9, 1921. No. 13.

New Dispatching Schedule for Ships Making the Transit of the Canal.

Beginning August 15, 1921, a new system of dispatching vessels through the Panama Canal on a prearranged time schedule was tentatively introduced with the intention of making it permanent provided it were shown that adherence to the schedule did not result in unnecessary delays to shipping.

It was understood in some quarters that the new method of dispatching made a radical change, in that transit of the Canal was limited to the hours of daylight. This idea is erroneous. Vessels have never been sent through at night, and operations have never been conducted on a 24-hour schedule. It was never intended to attempt continuous operation until this change is made necessary by the increase of traffic.

Prior to August 15 of this year vessels were dispatched through the Canal southbound up to 1.30 p. m. each day, and northbound up to 3 p. m. Under the new schedule the time of dispatching southbound was not affected, but the time of dispatching from Balboa northbound was put back one hour and a quarter, that is, from 3 p. m. to 1.45 p. m. Any vessel arriving at Cristobal by 1.30 p. m. and any vessel arriving at Balboa by 1.45 p. m. will go through on the day of arrival.

Since the schedule has been in operation 3 vessels arrived during the month of September and could not go through which would have gone through the same day under the old system. This was only $1\frac{1}{3}$ per cent of the vessels arriving during that month.

In practical operation there are slight delays of from 1 to 2 hours in time of transit; but it is difficult to determine whether these delays are greater than they would have been under the old system. In the one case ships are retarded to await a regular time for dispatching; in the other they were dispatched immediately but were frequently held up at the locks until traffic had passed moving in the opposite direction; so that it is believed that the new schedule does not increase the average delay in transit.

The new method of running ships through on time schedule is very much safer than the method formerly used, in that it insures the arrival of vessels at the locks at times when there are no adverse currents set up by the operation of the locks.

The present arrangement is very elastic as long as vessels arrive at the entrance of the Canal before the times mentioned. The hour set at Cristobal is the same under the new and old schedule; the only innovation being the difference of one hour and a quarter in the time of arrival at Balboa. The saving effected in operating expenses is considerable, and the effect on shipping appears to be so slight as to be practicably negligible. If, however, it should appear at any time in the future, that vessels using the Canal are subjected to expensive delays, the schedule will be modified.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, November 5, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt. water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Springfield	29	7 37	30	6 05	30	13 58	30	15 01	American.	N. Atl. & Western S. S. Co. (S. B.)	411.0	54.0	15.6	Portland.	Seattle	General	2,515	6,576	4,971
Moorshead Prince	29	16 52	30	6 50	30	15 07	30	16 05	British.	Prince Steamship Line	425.0	56.0	27.0	Savannah.	Yokohama.	General	7,300	7,629	5,707
Nagasaki	30	6 12	30	8 40	30	15 15			American	United States Navy	243.0	63.0	17.1	Guantanamo.	Balboa				
India Arrow.	30	6 40	30	9 05	30	16 34	30	18 10	American	Standard Transportation Co.	468.0	63.0	26.6	New York	San Francisco.	Petroleum	10,800	10,084	7,426
Renato	29	11 49	31	6 15	31	14 04	31	15 50	Chilean.	Comp. Sud-Amer. de Vapores	431.0	51.0	27.4	Hamburg	Valparaiso.	Coal and coke.	3,074	6,050	3,442
Oreus	30	14 28	31	6 50	31	15 07	1	1 32	American	Wessel Duval & Co. (S. B.)	396.0	53.0	19.0	New York	Talcahuano	Coal and coke.	3,858	5,667	4,220
Lempoc	30	15 27	31	7 58	31	16 34	2	13 45	British.	C. T. Bowring & Co.	435.0	56.0	26.0	Tampico	Tocopilla.	Fuel oil	9,500	7,496	5,311
Ohio Maru	30	19 40	31	8 45	31	17 03	31	18 33	Japanese.	Kawasaki Kaishiki Kaisha.	385.0	51.0	13.6	Cardiff	Portland.	Ballast	5,928	4,381	
Waimate	30	23 18	31	9 40	31	17 28	31	18 33	British.	New Zealand Shipping Co.	420.0	54.0	28.0	Liverpool.	Auckland	General	6,500	7,198	5,425
West Lewark.	31	4 41	10 26	31	18 16	1	2 00	American	Williams, Dimond & Co.	431.0	54.0	21.0	Glasgow	Tacoma.	General	2,928	7,946	5,739	
Wheaton	31	6 12	31	10 58	31	19 25			American	United States Army (S. B.)	415.0	54.0	26.0	New York	Balboa	General, explosives.	2,640		
Manavi	27	20 00	31	11 33	31	20 10	31	22 08	British.	Pacific Steam Navigation Co.	215.0	35.0	10.6	Cristobal	Guayaquil	General	34	1,357	884
Balboa	15	17 24	31	11 25	31	20 15	31	21 23	American	Colombian Maritime Co.	190.0	29.0	11.0	Cristobal	Buenaventura	Ballast		741	350
Kinderdijk	31	9 32	31	12 28	31	21 33	31	22 45	Dutch.	Holland-American Line	470.0	53.0	18.1	Rotterdam	San Francisco	Ballast	3,600	8,515	6,068
Argyll	27	11 58	31	12 50	31	22 10	1	1 05	French.	Compagnie de Boleo.	320.0	41.0	24.0	Tampico	Santa Rosalia	Crude oil	832	3,141	2,096
Andahusia.	30	23 38	31	12 55	31	22 15	31	23 20	Swedish.	Swedish Lloyd's	240.0	37.0	17.3	New Orleans	Valparaiso	General	832	1,872	1,227
Atlantshavet.	31	16 41	1	6 23	1	14 01	1	15 05	Danish.	Atlantshavet Steamship Co.	378.0	52.0	17.3	Copenhagen.	Tocopilla.	Ballast		5,814	4,490
Canada Maru.	1	5 12	1	7 22	1	15 05	1	17 30	Japanese.	Oakura Shosen Kaisha.	400.0	51.0	23.6	Buenos Aires.	Yokohama.	General	3,574	5,999	4,101
Glasgow Maru.	1	9 10	1	9 36	1	17 20	1	19 02	Japanese.	Kokusai Kisen Kaishiki Kaisha	385.0	51.0	25.0	Galveston.	Yokohama.	General	5,962	5,919	4,389
Tokufuku Maru	1	12 18	1	12 35	1	19 38	2	21 15	Japanese.	Kokusai Steamship Co.	385.0	51.0	25.0	Barry	Vancouver.	Ballast	3,048	5,956	4,471
Fendik	1	17 24	2	6 13	2	13 52	2	17 05	Dutch.	W. R. Grace & Co.	470.0	53.0	19.8	London.	Los Angeles.	General	3,048	5,954	4,066
Santa Luisa.	2	11 20	2	11 35	2	19 32	2	21 15	American.	Union Oil Co.	360.0	52.0	20.8	New York	Talcahuano.	General	1,489	5,694	3,975
Los Angeles.	2	21 25	3	7 06	3	14 55	3	16 19	Japanese.	Kokusai Kisen Kaishiki Kaisha	435.0	56.0	30.0	Puerto Lobos	San Francisco.	Crude oil	11,000	7,193	4,903
Yefuku Maru.	2	22 58	3	8 05	3	15 39	3	17 03	Norwegian.	B. Stolt Nielsen.	411.0	54.0	22.2	Cardiff	Hongkong.	Case oil	6,910	5,933	3,593
Nielsen	3	8 35	3	9 06	3	16 23	3	17 40	American.	Ishman Steamship Line	424.0	56.0	26.2	New York	Honolulu.	Coal	5,000	6,023	3,062
Steel Ranger	3	13 43	4	6 30	4	14 00	4	15 25	Japanese.	Kokusai Kisen Kaishiki Kaisha	400.0	53.0	16.4	Norfolk.	San Francisco	General	6,900	7,539	5,448
Erie Maru	4	3 36	4	7 24	4	14 54			American.	United States Navy	224.0	40.0	15.0	Charleston.	Portland.	Ballast		5,977	4,305
Sacramento	3	17 15	4	7 29	4	16 45	6	22 12	Chilean.	South American Steamship Line.	336.8	41.2	19.6	Baltimore.	Balboa.	General	371	3,296	2,156
Imperial	3	16 32	4	8 45	4	16 31	4	17 50	American.	Standard Oil Co.	449.5	59.6	16.0	Cristobal.	Valparaiso.	Ballast.		8,612	6,457
Armore																			
Canadian	3	15 54	4	9 12	4	18 15	6	18 50	Canadian.	Canadian Government.	400.3	52.0	23.8	New York	Auckland.	Oil, general.	6,000	5,842	4,092
Planter	3	1 22	4	10 30	4	19 25	4	23 00	British.	Pacific Steam Navigation Co.	361.0	46.0	18.0	New York	Guayaquil.	General	219		
Quilpu.	3	18 20	4	10 30	4	19 28	4	22 27	American	Pacific Mail Steamship Co.	283.0	37.0	17.4	Cristobal	San Francisco.	General	1,665	2,379	1,593
San Juan.	4	6 00	4	11 35	4	20 40	4	21 46	American	American-Hawaiian Line	414.0	53.0	21.6	New York	Los Angeles.	General	2,200	7,049	4,941
Kentuckian.	4	6 00	4	11 35	4	20 40	4	21 46	American	Williams, Dimond & Co. (S. B.)	410.0	54.0	21.0	Hamburg.	Los Angeles.	General	2,448	6,573	4,901
West Katan.	4	11 35	4	12 15	5	5 15	5	5 15	American	Williams, Dimond & Co. (S. B.)	410.0	54.0	21.0	Hamburg.	Los Angeles.	General	2,448	6,573	4,901

Gunboat.
United States Army transport.
Patrol yacht.

Patrol yacht.

United States Army transport.

Gunboat.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.																
Schooner.																
Irene S. Wilkin- son's	4	9 18	5	6 40	5	14 33	American.	Howard Lumber Co.	187 3	38 0	11 0	Charleston.	San Miguel.	Merchandise.	4	866
West Haven.	4	9 47	5	10 05	5	17 08	American.	Atl. Gulf & Pacific S. Co.	410 0	54 0	19 0	Baltimore.	Los Angeles.	General.	4,499	6,065
Gen. H. F. Hodges.	2	13 12	5	11 06	5	18 01	American.	Panama Railroad Steamship Line	323 5	39 0	15 6	New York.	Guayaquil.	General.	376	3,013
Ionic.	4	19 33	5	11 30	5	18 55	British.	White Star Line.	500 0	63 0	28 2	London.	New Zealand.	General.	7,000	12,872
Collegian.	29	18 20	30	6 39	30	14 24	31	15 12	British.	T. & J. Harrison.	455 4	56 3	25 0	Vancouver.	General.	8,036
Andrea F. Luckenbach.	29	23 10	30	7 51	30	15 32	30	15 32	American.	Luckenbach Line	496 0	68 2	25 0	San Pedro.	General.	10,500
S. C. 284	30	16 20	31	6 40	31	16 50	31	21 15	British.	United States Navy.	110 0	16 0		Balboa.	(^o)	5,384
Rupehu	30	16 20	31	6 40	31	16 50	31	21 15	British.	New Zealand Shipping Co.	457 0	58 2	24 6	Wellington.	General.	5,316
Kenuta.	30	22 30	31	8 55	31	17 15	4	7 29	Chilean.	Pacific Steam Navigation Co.	401 3	52 2	25 0	Valparaiso.	General.	354
Imperial	30	22 30	31	8 55	31	17 15	4	7 29	Chilean.	Chilean Line.	336 8	41 2	21 0	Talcahuano.	General.	689
San Juan.	31	6 09	31	9 46	31	18 20	4	10 30	American.	Pacific Mail Steamship Co.	283 0	37 0	21 0	San Francisco.	(^o)	3,450
Delco	31	11 50	31	12 21	31	20 40	4	23 35	American.	Delco Steamship Co.	328 0	46 2	18 0	Columbia Riv.	Lumber	3,460
Quillota	31	8 50	31	11 25	31	18 17	1	14 45	British.	Pacific Steam Navigation Co.	361 4	46 2	17 0	San Francisco.	General.	591
Tampa	28	2 00	1	6 57	1	14 09	1	14 09	American.	United States Government.	240 0	39 0	17 0	San Francisco.	General.	1,615
Bologna	31	14 30	1	7 53	1	16 25	4	6 26	Italian.	La Veloce Line.	384 9	46 7	19 6	Valparaiso.	Produce	79
Barima.	1	8 55	1	10 07	1	17 05	6	6 06	British.	Pacific Steam Navigation Co.	220 5	37 1	10 6	Champerico.	Ballast	703
Solana	1	9 40	1	11 18	1	18 20	2	12 10	American.	Pacific Mail Steamship Co.	419 5	56 5	18 0	Iquique.	(^o)	3,490
Ceres.	1	1 00	2	6 49	2	15 30	3	16 04	Dutch.	Royal Netherlands W. I. Mail.	348 0	48 2	20 0	Valparaiso.	General.	4,950
Huanchaco.	1	21 50	2	7 38	2	15 22	2	18 34	British.	Pacific Steam Navigation Co.	390 6	50 2	24 6	Port Stanley.	General.	1,755
Gen. O. H. Ernst.	2	11 00	2	11 57	2	18 25	4	17 10	American.	Panama Railroad Steamship Line	356 4	45 3	17 2	Guayaquil.	General.	7,035
La Habra.	2	13 15	2	13 52	2	20 30	2	22 59	Norwegian.	Wilhelm Wilhelmsen	424 8	57 0	19 0	Valparaiso.	Ballast	93
Jamaica	2	15 30	3	6 48	3	14 26	3	16 10	British.	Pacific Steam Navigation Co.	220 0	34 0	10 3	Tumaco.	General.	5,923
Willpilo	2	21 35	3	7 42	3	15 13	3	16 10	American.	Williams Steamship Co.	386 8	52 2	24 0	Portland.	General.	5,775
Dorset	3	9 41	3	10 48	3	19 00	4	12 25	British.	Federal Steam Navigation Co.	460 0	58 2	23 6	Lyttleton.	(^o)	7,410
Washington	3	14 05	4	6 28	4	15 05	4	16 19	Japanese.	Kokusai Kisen Kaisha.	385 0	51 0	26 0	Portland.	Wheat.	5,000
Maru	3	14 05	4	6 28	4	15 05	4	16 19	Japanese.	Kokusai Kisen Kaisha.	385 0	51 0	26 0	Portland.	Wheat.	5,000
F. J. Lucken- bach.	4	3 00	4	7 52	4	15 50	4	21 45	American.	Luckenbach Line.	446 0	56 1	23 0	Astoria.	General.	7,085
Terrier	4	3 00	4	8 28	4	16 13	4	16 53	Norwegian.	Wilhelm Wilhelmsen.	400 0	52 0	24 0	Portland.	Wheat in bags.	1,962
Manitara	4	13 40	4	14 51	4	22 36	4	23 23	Peruvian.	Peruvian Line.	367 3	46 0	18 6	Callao.	General.	4,600
Alaskan	4	13 45	4	15 00	4	22 36	4	23 23	American.	American-Hawaiian Line.	470 1	57 2	24 0	Vancouver.	General.	5,759
Benjamin	4	18 00	5	6 39	5	14 36	5	16 22	American.	Standard Oil Co.	411 6	53 2	26 6	Talara.	Crude oil.	8,500
Brewster	4	18 35	5	7 59	5	15 22	5	15 55	American.	United States Steel Products Co.	424 0	56 0	27 0	Seattle.	Lumber, general.	2,400
Atlanta City.	5	2 00	5	8 15	5	16 05	5	19 00	American.	United States Steel Products Co.	288 8	44 6	18 6	San Francisco.	General.	7,059
Stanley Dollar.	5	2 00	5	9 30	5	16 37	5	19 00	Norwegian.	Dollar Line.	425 4	57 1	17 3	Antofagasta.	Ballast.	7,000
San Joaquin	2	9 15	5	12 58	5	20 45	5	20 45	Italian.	Societa Nazionale.	392 6	51 6	24 0	Valparaiso.	Nitrate, etc.	5,907
Aracazo Sal.	2	9 15	5	12 58	5	20 45	5	20 45	Italian.	Societa Nazionale.	392 6	51 6	24 0	Valparaiso.	Nitrate, etc.	5,907
Giorgio III.	2	9 15	5	12 58	5	20 45	5	20 45	Italian.	Societa Nazionale.	392 6	51 6	24 0	Valparaiso.	Nitrate, etc.	5,907

* Nitrate, coffee, cocoa, hides, and cotton seed.

* Coffee, dyewood, and general.

* Cold storage and general.

* Coast Guard cutter.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

(Continued on page 198, column 2.)

Commercial Traffic Through the Panama Canal in October, 1921, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo. Long tons.
<i>From Europe to west coast of United States:</i>							
British.....	8	35,261	44,173	54,534	35,441	\$34,123.21	
Japanese.....	6	23,817	26,090	34,249	23,224	27,196.30	
United States.....	3	13,272	17,093	21,511	14,111	14,897.09	5,840
Norwegian.....	2	8,631	10,758	13,645	8,601	9,348.07	3,800
Swedish.....	2	7,742	11,117	11,200	8,586	8,308.42	1,006
Greek.....	2	7,553	7,807	9,253	5,714	7,563.60	
Dutch.....	2	7,081	9,548	11,371	7,050	6,874.56	
French.....	1	4,326	4,363	5,923	3,763	5,235.60	245
Spanish.....	1	3,674	4,235	5,754	3,452	3,049.20	
Totals.....	27	111,357	135,184	167,440	109,922	116,596.05	10,891
<i>United States coastwise:</i>							
United States.....	22	93,450	113,712	142,278	92,586	116,752.05	86,442
<i>From United States to Far East:</i>							
Japanese.....	10	40,230	45,995	59,681	39,669	47,718.90	56,118
United States.....	5	19,373	28,528	31,489	19,288	24,216.25	40,125
British.....	4	14,584	19,424	23,206	14,674	18,230.00	27,446
Totals.....	19	74,187	93,947	114,376	73,631	90,165.15	123,689
<i>From Cristobal to west coast of South America:</i>							
British.....	4	1,811	2,532	3,321	1,980	2,263.75	399
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	931
Chilean.....	2	3,274	5,759	6,351	3,872	4,092.50	979
United States.....	2	672	700	1,230	744	504.00	
Totals.....	11	9,456	16,733	23,354	12,873	11,484.00	2,309
<i>From east coast of United States to west coast of South America:</i>							
United States.....	5	10,623	13,700	16,583	10,382	12,994.25	7,803
British.....	2	6,649	9,171	12,172	7,139	8,311.25	1,691
Norwegian.....	2	1,760	2,936	2,955	1,763	2,200.00	72
Swedish.....	1	1,091	1,227	1,825	1,282	1,363.75	832
Totals.....	10	20,123	27,034	33,535	20,566	24,869.25	10,398
<i>From Europe to Australasia:</i>							
British.....	7	33,731	46,258	51,856	33,882	42,031.25	35,126
French.....	1	164	163	198	170	195.60	300
Totals.....	8	33,895	46,421	52,054	34,052	42,226.85	35,426
<i>From Europe to west coast of South America:</i>							
British.....	4	9,566	13,311	14,518	9,091	11,781.52	5,737
French.....	1	4,219	4,932	6,669	4,224	5,273.75	164
Danish.....	1	3,127	4,090	4,950	3,163	3,908.75	3,003
Chilean.....	1	2,754	3,442	5,961	2,981	3,442.50	3,074
Dutch.....	1	1,603	3,057	2,655	1,625	2,003.75	1,354
Totals.....	8	21,269	28,832	34,753	21,084	26,410.27	13,332
<i>Foreign ships in ballast between United States coastwise ports:</i>							
Japanese.....	2	8,742	9,135	11,733	8,514	8,688.72	
Norwegian.....	1	4,599	4,990	4,811	2,859	5,748.75	
British.....	1	3,007	4,872	4,834	2,996	3,597.84	
Totals.....	4	16,348	18,997	21,378	14,369	17,945.31	
<i>From east coast of United States to Australasia:</i>							
British.....	4	15,206	17,558	22,823	15,303	18,830.25	16,432
<i>From Europe to west coast of Canada:</i>							
United States.....	1	4,820	6,026	7,583	4,819	6,025.00	2,000
Danish.....	1	5,191	5,663	6,913	5,218	6,488.75	6,950
British.....	1	3,443	4,305	5,421	3,411	4,303.75	2,164
Totals.....	3	13,454	15,994	19,917	13,448	16,817.50	11,114
<i>From east coast of United States to west coast of Canada:</i>							
United States.....	1	5,203	5,624	6,939	5,203	6,503.75	8,268
British.....	1	3,572	4,565	5,604	3,582	3,286.89	
Totals.....	2	8,775	10,189	12,543	8,785	9,790.55	8,278
<i>From east coast of South America to west coast of United States:</i>							
United States.....	2	8,170	9,263	11,897	7,305	8,466.58	4,997

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo. <i>Long tons.</i>
<i>From east coast of Mexico to west coast of Central America:</i>							
United States	1	4,203	5,041	6,703	4,203	\$5,253.75	9,000
French	1	2,155	2,096	2,953	1,880	2,515.20	360
Totals	2	6,358	7,137	9,656	6,083	7,768.95	9,360
<i>From Cristobal to west coast of Central America:</i>							
British	1	1,401	1,577	2,731	1,463	1,751.25	1,569
<i>From Mexico to west coast of Canada:</i>							
British	1	7,774	7,874	10,397	7,725	9,448.80	15,000
<i>From Mexico to Far East:</i>							
Japanese	1	5,513	6,385	9,049	6,502	6,891.25	8,949
<i>From Canada to Australasia:</i>							
British	1	5,024	5,078	6,957	5,104	6,093.60	4,769
<i>From Mexico to west coast of South America:</i>							
British	1	4,645	5,311	7,270	4,513	5,806.25	9,500
<i>From Cristobal to west coast of United States:</i>							
United States	1	1,862	2,206	3,169	1,862	2,327.50	1,467
<i>From Mexico to west coast of United States:</i>							
Norwegian	1	832	1,121	1,648	811	807.12	
<i>Colombian coastwise:</i>							
British	1	614	622	1,138	602	746.40	525
Totals, October, 1921	131	459,713	571,175	708,363	458,589	541,994.93	374,437
Totals, September, 1921	128	434,250	530,634	669,087	427,395	513,793.61	300,720
Totals, October, 1920	119	381,447	470,536	599,920	381,626	463,916.53	488,713

PACIFIC TO ATLANTIC.

<i>From west coast of United States to Europe:</i>							<i>Long tons.</i>
British	14	46,001	56,480	70,797	45,099	\$57,311.05	97,731
Japanese	5	22,294	22,499	29,802	21,077	26,998.80	38,835
United States	5	21,727	26,005	32,943	21,678	27,158.75	39,341
Danish	3	11,455	13,224	15,284	12,978	14,151.60	22,081
Spanish	1	3,031	3,437	4,648	2,877	3,788.75	6,100
Dutch	1	2,196	3,468	3,684	2,207	2,745.00	5,700
Totals	29	106,704	125,113	157,158	105,916	132,153.95	209,788
<i>United States coastwise:</i>							
United States	19	81,368	96,731	121,827	81,338	101,710.00	105,951
<i>From west coast of South America to Europe:</i>							
British	8	28,544	37,363	46,953	28,721	35,680.00	46,571
Danish	1	4,257	5,317	6,645	4,244	5,321.25	6,193
French	1	3,600	4,146	5,765	3,681	4,500.00	4,250
Norwegian	1	3,053	3,071	4,101	3,061	3,685.20	5,450
Dutch	1	2,224	3,807	3,623	2,229	2,780.00	5,344
Totals	12	41,678	53,704	67,087	41,936	51,966.45	67,808
<i>From west coast of South America to east coast of United States:</i>							
United States	7	16,698	21,042	27,538	17,226	20,872.50	23,672
British	4	9,626	13,661	18,185	10,357	12,032.50	7,087
Norwegian	1	881	1,479	1,483	873	1,101.25	905
Totals	12	27,205	36,182	47,216	28,456	34,006.25	31,664
<i>From west coast of South America to Cristobal:</i>							
British	4	1,325	1,720	2,391	1,465	1,656.25	1,424
Chilean	3	4,549	7,915	9,080	5,505	5,686.25	2,262
Peruvian	3	3,699	7,742	12,452	6,277	4,623.75	6,338
United States	2	672	700	1,230	744	840.00	1,053
Totals	12	10,245	18,077	25,153	13,991	12,806.25	11,107
<i>From Australasia to Europe:</i>							
British	6	30,789	36,498	47,070	30,564	38,282.70	33,305
<i>From west coast of Canada to Europe:</i>							
British	3	12,667	16,506	20,185	12,744	15,833.75	26,281
United States	1	3,450	5,448	5,687	3,450	4,312.50	8,100
Sweden	1	2,248	4,089	3,767	2,865	2,810.00	5,604
Totals	5	18,365	26,043	29,639	19,059	22,956.25	39,985
<i>From Far East to Europe:</i>							
British	1	5,523	5,852	5,713	3,643	6,903.75	4,488
Danish	1	5,452	6,874	8,597	5,469	6,815.00	12,500
Japanese	1	4,470	5,529	7,031	4,343	5,587.50	10,806
Totals	3	15,445	18,255	21,341	13,455	19,306.25	27,794

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Cargo.
<i>From west coast of Canada to east coast of United States:</i>							<i>Long tons.</i>
United States.....	3	11,112	12,873	15,712	9,954	\$13,890.00	17,768
<i>From west coast of United States to Cristobal:</i>							
United States.....	3	11,349	12,172	16,493	11,326	10,108.75	1,467
<i>From Far East to east coast of United States:</i>							
Japanese.....	2	8,081	9,993	12,838	7,928	10,101.25	14,662
United States.....	2	7,448	9,472	11,578	7,127	9,310.00	13,256
Totals.....	4	15,529	19,465	24,416	15,055	19,411.25	27,918
<i>From west coast of United States to east coast of United States:</i>							
British.....	3	8,991	12,222	14,174	8,878	11,238.75	20,145
<i>From west coast of South America to east coast of Mexico:</i>							
British.....	2	8,684	9,719	13,700	8,565	6,997.68	.....
<i>From west coast of United States to east coast of Mexico:</i>							
United States.....	2	5,606	6,407	8,746	5,605	5,280.16	3,233
<i>From west coast of South America to Africa:</i>							
British.....	1	6,232	6,256	6,232	4,006	7,507.20	9,580
<i>From Australasia to east coast of United States:</i>							
United States.....	1	3,493	4,938	5,708	3,498	4,366.25	3,300
<i>Mexican coastwise:</i>							
French.....	1	2,155	2,096	2,953	1,880	1,616.25	.....
<i>From west coast of Central America to Cristobal:</i>							
British.....	1	638	706	1,170	654	797.50	92
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	513
<i>Miscellaneous routings:</i>							
Panaman.....	1	104	120	193	103	86.40	.....
United States.....	1	177	180	323	246	216.00	.....
Japanese.....	2	(²)	(²)	(²)	(²)	10,490.00	.....
Totals.....	4	281	300	516	349	10,792.40	.....
Totals, October, 1921...	124	406,483	498,379	627,449	405,087	505,940.69	611,338
Totals, September, 1921...	93	314,494	394,503	498,133	316,179	378,207.93	454,174
Totals, October, 1920...	119	380,566	465,043	591,016	372,914	447,909.05	502,353

¹ For orders.² Two Japanese cruisers with displacement tonnage of 20,980.**Canal Traffic in October.**

Commercial traffic through the Panama Canal during the month of October was not only greater than that of the preceding month, and that of the corresponding month of last year, but in point of tonnage and tolls collected has been exceeded but twice since the opening of the Canal, viz., in the months of January and March of the present year.

The following shows a summary of the commercial traffic through the Canal during the calendar year:

1921.	No. of ships.	Tonnage.		Tolls.	Tons of cargo.
		Panama Canal net.	Registered gross.		
January.....	279	1,004,323	1,383,778	\$1,005,857.46	1,177,053
February.....	241	916,838	1,179,979	917,412.79	952,904
March.....	255	1,112,818	1,417,220	1,105,536.55	1,084,563
April.....	227	955,503	1,203,087	927,977.09	907,613
May.....	210	864,617	1,092,602	835,882.77	792,735
June.....	192	761,477	960,857	751,964.12	694,720
July.....	206	810,613	1,022,802	804,503.11	708,982
August.....	236	965,276	1,219,817	955,380.78	839,273
September.....	221	925,137	1,167,220	892,001.54	754,894
October.....	255	1,069,554	1,335,812	1,047,935.62	985,775
Totals.....	2,322	9,476,156	11,983,174	9,334,451.83	8,898,512

The October traffic was made up as follows:

Direction.	No. of ships.	Panama Canal net tonnage.	Registered gross tonnage.	Tolls.	Tons of cargo.
Atlantic to Pacific.....	131	571,175	708,363	\$541,994.93	374,437
Pacific to Atlantic.....	124	498,379	627,449	505,940.69	611,338

During October 55 per cent of the total tonnage from the Atlantic to the Pacific was routed to the west coast of the United States and Canada, as compared with an average of approximately 26 per cent of the total tonnage during the past fiscal year. Vessels from the west coast of the United States and Canada made up 58 per cent of the total tonnage from the Pacific to Atlantic as compared with an average of 32 per cent during the past fiscal year. This excess above normal traffic is due in part to the heavy grain shipments; 22 full cargoes of wheat and barley passed from the Pacific to the Atlantic during October, aggregating 152,279 tons, while in addition these two grains formed a large part of many mixed cargoes.

The percentage of tonnage routed to the west coast of South America represented but approximately 14 per cent of the Atlantic-to-Pacific traffic and was under that of last month and less than half the average for the past fiscal year. The percentage of tonnage from the west coast of South America increased slightly over that for last month but was only five-eighths of the average tonnage during the past fiscal year. Nitrate shipments were heavier than for the past few months but totaled only about a third of the heavy shipments of a year ago.

Traffic from Australasia to the east coast of the United States and Europe represented 8 per cent of the Pacific-to-Atlantic traffic, as compared with 10 per cent for last month, and an average of 17 per cent during the past fiscal year. Traffic to Australasia made up 12 per cent of the Atlantic-to-Pacific tonnage, which is a slight increase over last month but only about two-thirds of the normal traffic for the last fiscal year.

Tonnage routed to the Far East made up 18 per cent of the total Atlantic-to-Pacific traffic, and returning tonnage on this route represented approximately 7 per cent; these are approximately the normal percentages. An unusual feature of this traffic was 3 ships routed from the Far East to Europe, 1 of which was from the Kamchatka Peninsula, laden with 240,573 cases (10,806 tons) of salmon.

Traffic to and from the east coast of Mexico represented about 5 per cent of the total traffic each way, which was about half of the proportion during the past fiscal year. A number of miscellaneous oil shipments were made during the past month, but the heavy shipments to the west coast of South America and the west coast of the United States, which were interrupted some months ago, have not yet been resumed.

Notice to Mariners.—Change of Light at Lamentin Point, Port-au-Prince Harbor, Haiti.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., November 4, 1921.

CIRCULAR NO. 643-95.

This office is informed through the Surveyor of Customs, Port-au-Prince, Haiti, as follows:

"I wish to inform you that the flashing red light on Lamentin Point, Port-au-Prince harbor, has been changed to a flashing white light, with no other changes."

JAY J. MORROW, Governor.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Volume XV. Balboa Heights, C. Z., November 16, 1921. No. 14.

Rate of Traffic This Year Compared with Last Year and Fiscal Year Ending June 30, 1921.

During the 10 months ending October 31, 1921, the total number of commercial ships passing through the Canal was 2,322, an average of 232.2 per month. At this rate the total for the year would be 2,786. During the calendar year 1920 the number of commercial ships was 2,814, an average of 234.5 per month; and in the fiscal year ending June 30, 1921, the number of commercial ships was 2,892, averaging 241 per month.

If as many as 246 ships make the transit in both November and December of this year the record for this calendar year, in number of ships, will equal that of last year. It will require, however, an average of 285 ships in November and December to bring the total up to the 2,892 ships in the last fiscal year.

In 3 months of this year (January, March, and October) there were more than 246 ships, but there has been no month in which 285 commercial ships have made the transit. The record for any month since the opening of the Canal is 279 ships, in January, 1921.

In cargo carried, the traffic during the 10 months has averaged less than the monthly average for the year 1920 and for the fiscal year 1921.

Hours of Operation of The Panama Canal Coaling Plants.

Prior to March 21, 1921, the coaling plants of The Panama Canal were operated continuously. Effective that date the Superintendent of the plants was instructed to abolish the third shift at Cristobal, to reduce as far as possible the force at Balboa, and until further notice to suspend all operations at both plants between the hours of 11 p. m. and 7 a. m. This action was taken to reduce operating expenses. Sales had fallen off, and the business done did not justify the maintenance of a maximum force. It was thought that the elimination of the third shift would not cause material inconvenience to shipping.

This was generally true, but it occasionally happened that a vessel began to coal late in the evening and did not finish prior to 11 p. m., when work was knocked off. This resulted in some instances in serious delays, and gave rise to complaint. To remedy this situation the Superintendent of Coaling Plants was instructed under date of August 22, 1921, to complete the bunkering of all ships at Cristobal when once commenced, provided this did not involve substantially more than 4 hours' overtime. At the same time the force at Balboa was reduced to one 8-hour shift working from 7 a. m. to 11 a. m. and from 12 noon to 4 p. m. All vessels passing through the Canal can bunker at Cristobal, and there are very few vessels confining their operations to the Pacific side and depending upon Balboa for coal. Sales from this plant have always been light, and there is no sufficient reason for maintaining the same service there as at Cristobal.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, November 12, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.	Entered Canal.	Completed transit.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.
			Day.	Hour.								Nature.	Tons.	
Bacina	1 17 05	6 06	6 13	04	British.	Pacific Steam Navigation Co.	220.0	37.0	12.9	Cristobal.	Champerico.	General.	400	871
Laura C. Hall.	26 13 03	6 06	6 13	33	British.	Pacific Metals Corporation.	81.0	25.6	9.0	Cristobal.	Buenaventura.	General.	100	1,634
Monsieur	29 13 43	6 15	6 13	33	Panaman.	Pacific Metals Trading Co.	102.6	22.6	9.6	Cristobal.	Buenaventura.	Ballast.	132	72
Howell Hall.	5 22 56	6 15	6 13	50	Panaman.	Isthmian Steamship Line.	400.8	51.0	24.8	New Orleans.	Kobe.	General.	6,415	6,095
Port Kenola.	6 13 14	7 07	7 15	57	British.	Commonwealth and Dom. Line.	481.2	62.3	24.0	Glasgow.	Port Chalmers.	General and iron.	2,950	10,708
Trentthick.	6 22 14	7 07	7 15	01	British.	Hain Steamship Line.	489.8	58.2	24.4	Cardiff.	Auckland.	Coal.	8,250	8,772
Gen. J. Frank- lin Bell.	7 12 47	7 53	7 15	01	American.	United States Army.	172.0	32.0	12.0	Cienfuegos.	San Francisco.			6,461
Harry Lucken- bach.	1 15 49	8 28	8 14	03	American.	Luckenbach Line.	449.0	60.0	25.8	New York.	Los Angeles.	General.	6,500	9,282
Williso	2 20 47	8 28	8 14	45	American.	Williams S. S. Co. (S. B.).	434.3	57.7	21.0	New York.	Los Angeles.	General.	4,000	7,983
Milano Maru.	8 03 32	8 49	8 16	03	Japanese.	Kokusai Kisen Kaisha.	400.0	53.0	23.2	New York.	Puget Sound.	General.	4,387	5,886
Nebraska	8 06 24	8 13	8 18	57	British.	Royal Mail Steam Packet Co.	450.0	58.0	19.3	London.	Vancouver.	General.	180	8,878
Omega	8 20 53	9 15	9 18	14	Peruvian.	Peruvian Government.	311.3	43.2	22.3	Barry.	Callao.	Coal and cement.	3,866	2,571
Panama	8 20 08	9 11	9 18	37	British.	Pacific Steam Navigation Co.	380.0	49.0	18.6	Hull.	Colonel.	General.	2,000	5,567
Pacific State.	9 17 04	10 25	10 14	12	American.	Pacific Steamship Co. (S. B.).	517.0	72.0	20.3	Baltimore.	Kobe.	General.	544	15,234
Pecos	9 17 03	10 18	10 15	10	American.	United States Navy.	455.0	56.0	27.3	Port Arthur.	Honolulu.	General and oil.	7,715	10,430
Roland	9 18 14	10 8	10 16	24	German.	Roland Line.	360.0	51.0	20.0	Bremen.	Guayaquil.	General.	3,062	4,791
Ortega	9 20 07	10 9	10 17	10	British.	Pacific Steam Navigation Co.	465.0	56.0	23.8	Liverpool.	Valparaiso.	General.	1,330	8,345
Levant Arrow.	9 22 20	10 35	10 18	25	American.	Standard Transportation Co.	468.3	62.7	28.0	Sabine.	Shanghai.	Fuel oil.	11,018	9,744
Mantaro.	4 22 36	10 27	10 19	15	Peruvian.	Peruvian Line.	367.3	46.0	19.7	Cristobal.	Molendo.	General.	311	8,838
Woodarra.	10 6 35	10 50	10 20	08	British.	British India Steam Nav. Co.	449.0	58.0	20.3	London.	Portland.	Ballast.	8,334	5,332
Lopez	10 7 24	10 13	10 17	10	American.	E. L. DeWitt.	23.0	4.0		Cristobal.	Balboa.			1
Remus	10 17 11	11 6	11 14	05	Norwegian.	A. O. Lindvig.	350.0	50.2	23.0	Baltimore.	Calao.	Coal and coke.	4,495	5,177
Suruga	10 15 28	11 7	11 14	59	American.	Barber Lines.	375.3	52.0	24.0	New York.	Hongkong.	General.	5,795	7,377
Eastern Moon.	10 13 37	11 8	11 17	13	American.	U. S. & Australia Line (S. B.).	384.8	51.0	27.0	New York.	Brisbane.	General.	5,937	8,904
Mont Cervin.	10 21 58	11 9	11 17	44	French.	Cia. Gen. Transports Maritime.	340.0	50.0	16.5	Marseilles.	Port Townsend.	General.	37	4,070
Dakota	11 6 40	11 10	11 17	55	American.	American-Hawaitan Line.	407.7	53.7	21.11	New York.	Portland.	General.	4,000	7,156
Steel Age.	11 8 00	11 10	11 18	51	British.	United States Steel Products Co.	395.5	55.0	27.0	Baltimore.	Kobe.	General, steel.	7,714	7,285
City of Naples.	11 12 55	11 13	11 19	48	British.	Ellerman Lines.	418.3	53.3	16.0	Newport.	Seattle.	Ballast.		5,256
Essequibo	11 14 09	12 15	12 13	48	British.	Pacific Steam Navigation Co.	450.0	57.0	23.6	New York.	Valparaiso.	General.	1,489	9,037
Havana Maru.	11 14 55	12 7	12 15	23	Japanese.	Osaka Shosen Kaisha.	407.0	50.0	27.0	New York.	Singapore.	General, other.	6,135	6,234
Mundella.	11 18 30	12 8	12 16	07	British.	Munson Steamship Line.	370.0	53.0	18.0	Galveston.	Los Angeles.	Sulphur.	2,500	5,668
Pear Branch.	11 21 40	12 9	12 16	55	American.	F. and W. Ritson.	412.0	53.0	19.6	London.	Valparaiso.	General.	2,097	4,297
Robert Dollar.	12 1 10	12 11	12 19	19	British.	Canadian Robert Dollar Co.	523.5	65.5	24.0	New York.	Vancouver.	General.	4,234	
Santa Fecla.	12 4 48	12 13	12 19	52	American.	W. R. Grace & Co.	298.6	49.0	17.0	New York.	Buenaventura.	General.	1,220	2,835

Motor schooner.

Bark.

Mine planter.

Tug.

Motor schooner.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Ship.	Arrived at port.	Entered Canal.	Completed transit.	Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.	Panama Canal tonnage.
Florida	6 23 12	7 7 46	7 15 35	American.	American-Hawaitan Line.	415.0	53.7	28.0	Seattle.	Liverpool.	General.	8,203
Wheaton	8 15 02	8 15 02	8 15 02	American.	United States Army (S. B.).	415.0	53.7	19.0	Balboa.	New York.	Ballast.	7,273
Nebraska	7 15 00	8 15 02	8 15 02	Dutch.	Holland-American Line.	470.1	55.0	28.0	Vancouver.	Antwerp.	General.	8,744

Abasco.	8 21 00	9	7 49	9 15 50	9 21 25	American	Pacific Steamship Co.	401.4	53.2 93.0	Portland	Specia, Italy	Wheat.	7 800 6.611 4.774
Salvador	8 22 30	9	8 34	9 15 22	13 9 20	British	Pacific Steam Navigation Co.	215.0	33.0 15.0	Guayaquil	General	General	443 1.213 692
Madrado	9 4 00	9	8 46	9 15 43	10 12 30	American	Guayaquil	208.6	40.0 15.7	Chancay, Peru	General	General	1 418 2.835 1.822
Valparaiso	10 7 43	10	8 46	10 15 43	11 12 57	Swedish	Johnson Line	367.0	51.3 94.7	San Francisco	General	Barley and fruit	6 026 5.371 3.969
Boston Maru	10 8 03	10	9 38	10 17 16	11 13 50	Japanese	Kokusa Kisen Kaisha	400.0	53.0 26.0	Portland	General	Wheat	7 339 5.876 4.240
Edward Luckenbach	10 9 15	10	10 47	10 17 44	10 17 44	American	Luckenbach Line	456.0	57.0 27.8	Portland	(*)	(*)	7 500 8.543 6.427
H. Keyes State	10 10 15	11	6 50	11 13 55	11 14 30	American	Matson Navigation Co. (S. B.)	517.0	72.2 25.6	San Francisco	Baltimore	(*)	3 577 15.234 10.471
Bahia	11 5 25	11	7 32	11 13 07	11 14 30	American	Colombian Maritime Co.	190.0	29.1 15.6	Buenaventura	Cristobal	General	598 741 350
Northumber-	11 5 00	11	8 56	11 16 07	11 16 07	British	Federal Steam Navigation Co.	530.0	63.0 28.6	Seattle	London	General	8 337 12.821 10.471
Asajula	11 6 00	11	9 05	11 16 39	11 16 39	British	Pacific Steam Navigation Co.	33.0	33.0 12.9	Champerico	Cristobal	Hides, coffee	105 1.273 706
Newport	11 12 20	11	13 35	11 19 35	11 19 35	American	Pacific Mail Steamship Co.	326.0	38.2 16.0	San Francisco	Cristobal	General	146 3.173 2.163
Hattie Lucken-	11 13 55	11	14 28	11 21 28	11 21 28	American	Luckenbach Line	331.5	47.0 22.0	Vancouver	New Orleans	General	3 232 4.808 3.768
back	12 4 50	12	7 45	12 16 00	12 18 00	American	Vacuum Oil Co.	425.0	57.2 26.6	San Francisco	Philadelphia	Lubricating oil	10 144 7.502 4.982
Birkenhead	12 6 00	12	8 45	12 16 49	13 7 05	Japanese	Nippon Yusen Kaisha	420.0	56.0 21.6	Kobe	New York	Kobe	6 034 7.200 5.154
Dakar Maru	12 12 30	12	13 49	12 21 15	12 22 27	British	F. and W. Ritson	390.5	51.0 22.0	Valparaiso	London	General	5 355 4.912 3.642
Cedar Branch	11 23 00	12	14 09	12 22 45	12 22 45	Dutch	Royal Netherlands W. I. Mail	346.2	44.3 22.0	Bahia de Caraquez	Amsterdam	(*)	3 650 3.819 2.632
Jau Van Nassau	12 13 39	12	14 18	12 20 55	12 20 55	American	United States Navy	110.0	16.0	Bahia	Cristobal		

Motor ship.

Shingles, copper, paper, canned goods, wool, leather, dried fruits, onions, etc.

Nitrates of soda and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Nov. 6	Abangarez	United Fruit Co.	New Orleans via Habana.	Nov. 6	Abangarez	United Fruit Co.	Bocas del Toro.
Nov. 7	Parismina	United Fruit Co.	New Orleans.	Nov. 6	Logician	Harrison Line	Puerto Cortez.
Nov. 7	San Bruno	United Fruit Co.	New York.	Nov. 7	Caribbean	Panama Railroad Cattle Industry.	Cartagena.
Nov. 8	San Gil	United Fruit Co.	Boston via Habana and Port Limon.	Nov. 7	Cristobal	Panama Railroad Steamship Line.	Norfolk.
Nov. 8	Tolosa	United Fruit Co.	New York via Habana.	Nov. 8	San Benito	United Fruit Co.	Boston via Port Limon.
Nov. 9	Abangarez	United Fruit Co.	Bocas del Toro.	Nov. 9	San Gil	United Fruit Co.	Boston.
Nov. 9	Peron	French Line	Bordeaux via waypoints.	Nov. 9	Tolosa	United Fruit Co.	New York via Port Limon
Nov. 9	Valerian	British Government	Cartagena.	Nov. 9	Parismina	United Fruit Co.	and Habana.
Nov. 11	Leon XIII	Spanish Line	Habana.	Nov. 9	Abangarez	United Fruit Co.	New Orleans via Bocas del
Nov. 12	Columbia	N. O. & S. A. S. Line	New Orleans.	Nov. 9	Abangarez	United Fruit Co.	Toro and Port Limon.
Nov. 12	Bayano	Elders & Fyffes, Ltd.	Port Limon.	Nov. 12	Bayano	Elders & Fyffes, Ltd.	New Orleans.
Nov. 12	Colon	Panama Railroad Steamship Line.	New York via Haiti.	Nov. 12	Peron	French Line	Kingston.
Nov. 12	Caribbean	Panama Railroad Cattle Industry.	Cartagena via Cispata.	Nov. 12	Boston Maru	Kokusa Kisen Kaisha	Havre via Puerto Colon-
Nov. 12	Boston Maru	Kokusa Kisen Kaisha	High seas.	Nov. 12	Boston Maru	Kokusa Kisen Kaisha	bia.

Gunboat.

PORT OF BALBOA.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Nov. 7	Ginyo Maru	Trans-Oceanic Co.	Hongkong.	Nov. 9	Ginyo Maru	Trans-Oceanic Co.	Valparaiso.
Nov. 9	Pacific	Trans-Oceanic Co.	Portland.	Nov. 9	Pacific	Trans-Oceanic Co.	Valparaiso.

* Other than ships passing through the Canal.

One Hundred Per Cent Increase Over Two Trade Routes.

The United States coastwise trade through the Panama Canal during August, September, and October, 1921, was more than double the trade for the corresponding period in 1920. The cargo handled in 1920 amounted to 268,747 tons, and in 1921 it aggregated 554,834 tons. Of the latter total, 214,449 tons was westbound, and 340,385 tons eastbound, the trade being thus fairly well balanced, with reasonable cargoes offering in either direction.

Another trade that shows an increase of more than 100 per cent is the eastbound trade from the west coast of the United States to Europe. The cargo handled in August, September, and October, 1921, was 582,719 tons, as compared with 285,441 tons in 1920. But the cargo moving in the opposite direction, from Europe to the west coast of the United States, was comparatively insignificant in 1920, amounting to only 44,978 tons for the 3 months under review, and declined in 1921 to 11,855 tons. The majority of the 62 vessels proceeding this year from Europe to the west coast went out in ballast, besides which 15 foreign vessels went out in ballast from Atlantic ports of the United States to the west coast to load return cargo for Europe.

Closely connected with the two trades dealt with in the preceding paragraphs are the Canadian coastwise trade, the trade between western Canada and Europe, and the trade between either seaboard of Canada and the opposite seaboard of the United States, in all of which there has been development.

Notice to Mariners.—Establishment of Light at Almirante, R. of P.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., November 8, 1921.

CIRCULAR No. 643-96.

The following advice has been received from the United Fruit Company at Almirante, Republic of Panama:

"One thousand watt electric light now hung on Almirante wireless tower at 393-foot elevation above sea level. Location of tower, latitude 9° 17' 30" North, longitude 82° 22' 54" West. Light is pointed exactly at Toro Point (Cape Toro at Bocas del Toro) Lighthouse, bearing North, 70° true East."

JAY J. MORROW,
Governor.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Two Weeks Ending November 12, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
San Juan.....	Pacific Mail Steamship Co.....	October 31..	October 31..	31	
Wheaton.....	Army Transport Service.....	October 31..		2,419	
Canada Maru.....	Osaka Shosen Kaisha.....	November 1	November 1		4
Barima.....	Pacific Steam Navigation Co.....	November 1	November 1	4	
Ansaldo San Giorgio III.....	Societa Nazionale di Navigacion.	November 2	November 5	70	50
Jamaica.....	Pacific Steam Navigation Co....	November 2	November 2	2	
San Juan.....	Pacific Mail Steamship Co.....	November 4	November 4	1	1
Quilpue.....	Pacific Steam Navigation Co....	November 4	November 4		11
Laura C. Hall.....	Pacific Metals Transportation Co.	November 6	November 6		60
Ginyo Maru.....	Toyo Kisen Kaisha.....	November 7	November 9	1,156	
Salvador.....	Pacific Steam Navigation Co....	November 9	November 9	1	
Pacifico.....	Trans-Oceanic Co.....	November 9	November 9		55

* U. S. Army transport.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending November 12, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Grelrosa	Pacific Steam Navigation Co.		October 30.		690
Renaico	Chilean Line		October 30.		100
Atenas	United Fruit Co.	October 30.	October 30.	(¹)	34
Collegian	Harrison Line	October 30.	October 31.	(¹)	254
Manavi	Pacific Steam Navigation Co.		October 31.		35
Quillota	Pacific Steam Navigation Co.	October 31.	November 1.	151	92
Camden	United Fruit Co.	October 31.	November 2.	8,630	(²)
Zacapa	United Fruit Co.	October 31.	November 3.	902	200
Imperial	Chilean Line	October 31.	November 4.	353	368
San Juan	Pacific Mail Steamship Co.	October 31.	November 4.	689	1,664
Gen. G. W. Goethals.	Panama Railroad Steamship Line.		November 4.		1,503
Crijnsen.	Royal Netherlands W. I. Mail	November 1.	November 2.	120	(²)
Eendijk	Holland-American Line.	November 1.	November 1.	324	83
Bologna	Italian Steamship Line.	November 1.	November 4.	(¹)	345½
Barima	Pacific Steam Navigation Co.	November 1.	November 1.	79	
Ulua	United Fruit Co.	November 2.	November 2.	168	349
Atenas	United Fruit Co.	November 2.	November 2.	8½	2
Ceres	Royal Netherlands W. I. Mail.	November 2.	November 3.	130	213
Santa Marta	United Fruit Co.	November 2.	November 3.	601	86
Gen. O. H. Ernst.	Panama Railroad Steamship Line.	November 2.	November 4.	335	237
Gen. H. F. Hodges.	Panama Railroad Steamship Line.	November 2.	November 5.	74	16
Cristobal.	Panama Railroad Steamship Line.	November 2.		9,615½	
Sixtoles.	United Fruit Co.	November 3.	November 3.	1	22
Jamaica	Pacific Steam Navigation Co.	November 3.		75	
Logician	Harrison Line	November 3.		461	
Quilpué	Pacific Steam Navigation Co.	November 3.	November 4.	74	90
Mantaro	Peruvian Line	November 4.		1,962	
Caribbean	Panama Railroad Cattle Industry.	November 4.		750	
Crijnsen.	Royal Netherlands W. I. Mail.	November 4.	November 5.	(¹)	736
San Bruno	United Fruit Co.	November 5.	November 5.	8	323
Barima	Pacific Steam Navigation Co.		November 6.		399
Logician	Harrison Line		November 6.		633
Abangares	United Fruit Co.	November 6.	November 6.	(¹)	1
Caribbean	Panama Railroad Cattle Industry.		November 7.		63
Jamaica	Pacific Steam Navigation Co.		November 8.		3
Parismina	United Fruit Co.	November 7.	November 9.	888	3
Potosi	Pacific Steam Navigation Co.	November 8.	November 9.	(¹)	44
San Gil	United Fruit Co.	November 8.	November 9.	15	(²)
Tolosa	United Fruit Co.	November 8.	November 9.	638	49
Salvador	Pacific Steam Navigation Co.	November 9.		443	
Perou	French Line	November 9.	November 12.	14	334
Abangares	United Fruit Co.	November 9.	November 9.	1	10
Mineola	Grace Line	November 9.	November 10.	75	(²)
Balboa	Colombian Maritime Co.	November 11.		599	
Newport	Pacific Mail Steamship Co.	November 11.		146½	
Leon XIII	Spanish Line	November 11.		140	
Ansaldo VIII	National Navigation Society	November 11.	November 12.	35	(¹)
Esequibo	Pacific Steam Navigation Co.	November 11.	November 12.	114	(²)
Acacutla	Pacific Steam Navigation Co.	November 11.		105	
Mantaro	Peruvian Line		November 10.		313
Dakar Maru	Nippon Yusen Kabushiki Kaisha.	November 12.		90	
Colon	Panama Railroad Steamship Line.	November 12.		2,650	
Jan Van Nassau	Royal Netherlands W. I. Mail	November 12.		1	
Caribbean	Panama Railroad Cattle Industry.	November 12.		800	
Bayano	Elders & Pyffes, Ltd.	November 12.	November 12.	23	½

¹ No cargo discharged.² No cargo laded.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the two weeks ended November 12:

Steamship *Lompoc*, drill holes through hubs of 2 drums to free drums from shaft; manufacture 2 drifts to use in removing drums from shafts; machine 1 set collar; true up 1 drum shaft and fit to drum; manufacture new drum shaft; disassemble old drums and shaft; remove both gears and reassemble drums and shafts; chip both new drum jaws to conform with jaws on gear; install brake bands; manufacture one 3-inch galvanized pipe bend, with stop valve and tee assembled; manufacture 48 kinghorn valves; furnish gasoline and use of heating equipment to heat heads; U. S. supply boat *No. 2*, install band on reverse gear with screw and lever arrangement; renew brass yoke on clutch engager; overhaul reciprocating circulating pump;

overhaul air pump on main engine; overhaul spray air gauge; install oil cooler for crank case lubricating oil; install oil strainer on outside of crank case; install valve in filling pipe to gravity oil tank, and fit by-pass; overhaul fuel pump; install discharge pipe with valve, on after end of manifold; alter discharge valve on first stage air compressor; U. S. A. T. *Wheaton*, manufacture 1 new armature shaft for 15 K. W. armature; crane boat *I. a Valley*, calk seams; renew bad order rivets; install patch on bottom; install 2 patches between fender angles, where bolt holes could not be welded; install 3 patches on deck where plates are broken; barge *No. 136*, test all tanks and stop all leaks; remove cement from hole through deck, and patch; renew side fenders on gear side; renew end fenders and make necessary alterations; clean and paint outside of hull up to light water line; renew bitt on gear side; renew loose rivets on strongback girders; renew 3 strongback plates; launches *Goodwill*, furnish crane service to handle launch; *Pacific*, manufacture and install 1 water-tight bulkhead, 4 frames from the stem; U. S. S. *Niagara*, repair leak in water end of evaporator feed pump; renew section of discharge line of ash ejector; repair water cylinder on flushing pump; repair cracked flange on fireroom steam line; perform necessary repairs to 1 U. S. Navy deck clock; steamships *Ginyo Maru*, make necessary repairs to telemotor; *Hawkeye State*, weld discharge manifold for ice machine; *Imperial*, dock, stage, clean and paint bottom; fair tip of 1 propeller blade; renew shoe plate, aft; install zincs; open up, grind in, clean, paint, and repair sea valves as required; *Ansaldo San Giorgio II*, manufacture 24 high pressure snap rings; 12 valve coil springs, 1 socket wrench and 1 bronze bull ring for high pressure air compressor; *Stanley Dollar*, manufacture 1 thumb screw for sextant; barge *No. 133*, dock, stage, and clean; scale and paint bottom to light load line; renew strongback supports and loose rivets on strongback girders; renew end fenders and make necessary alterations; remove cement from hole through deck and install patch; straighten fender angles and renew side fender on loading side; clean and test all tanks and stop leaks that develop; air compressor *No. 27*, dock, stage, and clean; scale and paint bottom to light load line; U. S. S. *Sacramento*, manufacture and install 1 lower boom; manufacture and install 1 ventilator cowl for lead to magazine; manufacture 2 wireless spreaders; steamship *Eastern Moon*, manufacture fire tools; coal hoist *No. 1*, dock, stage, and clean; scale and paint bottom to light load line; barge *No. 148*, dock, stage, and clean; scale and paint bottom to light load line; dredge *Cascadas*, replace all bad order tubes with tubes furnished by Dredging Division and install zinc plates on condenser heads.

PREVIOUSLY REPORTED.

Launch *Wilson B. Gaither*, scrape and clean bottom; perform general hull repairs; steamship *Panama*, reboiling and general repairs to machinery and hull; dredge *No. 84*, perform heavy running repairs; drill boat *Teredo No. 2*, dock, stage, and clean; scale and paint bottom to light load line; barge *No. 138*, dock, stage, and clean; scale and paint bottom to light load line.

The following vessels were at the Cristobal shops for repairs during the two weeks ended November 14:

Steamship *San Juan*, clear circulating water space in H. P. go-ahead slide valve; refit metallic packing; overhaul main air pump, etc.; U. S. S. *O-12*, renew all rivets in engine foundations; overhaul sea valves; repair steering and diving gear; overhaul hydroplane; renew engine foundation knees; refit shifting collars on tail shaft; weld patches on mufflers, etc.; U. S. S. *Pecos*, rebore H. P. cylinder of ice machine; machine 1 valve; make 8 oil strainers; renew tubes where necessary in 4 boilers, etc.; steamships *Jamaica*, draw H. P. piston; true up rod and install new metallic packing; fit new tail shaft; calk rivets in hull where directed; repair steering gear; paint hull, etc.; *General H. F. Hodges*, braze flanges on receiver pipe; install 2 tubes in starboard boiler; manufacture 8 valves for feed and bilge pumps; *Caribbean*, repair ash hoist engine; repair starboard main engine drain pipes; anneal steering chain and rebush sheaves for same; repair 5 ice cans; repair freeing ports; *Cristobal*, repair lead sanitary pipe in cargo hold; fit elbow on dry pipe, etc.; *Mantaro*, cut out and weld crack in end plate in starboard boiler; renew fusible plugs and expand tubes in center combustion chamber, starboard boiler; renew hot water pipe, etc.; *Crijnsen*, *Barima*, *Bologna*, and tug *Tavernilla*, minor repairs; supply boat *No. 1*, weld and reinstall cylinder on main engine; steamships *Acajulla*, reverse wild cat on anchor windlass; *Colon*, roll tubes in after port boiler; repair steam line to whistle; manufacture 2 hatch battens; weld 2 handles for shaper; repair bracket for idler gear to feed screw; repair gear and make one pinion for lathe; launch *Lieut. David Putnam*, install new propeller.

PREVIOUSLY REPORTED.

Tug *Mensabe*, repair hull and rudder; roll tubes in boiler and test same, etc.; motor ship *Laura C. Hall*, install scuppers; manufacture strainers; install knees in ship's hold, etc.; launch *Gloriana*, repair hull and keel; renew awnings; overhaul engine, etc.; steamship *Ampat*, manufacture, fit, and install new rudder; install asbestos lining and tubes in both boilers; repair sea valves; paint bottom, etc.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective November 1, 1921:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.375
Brass, sheet, average.....	Lb.	.41
Bronze, Tobin, average.....	Lb.	.31
Gasoline, motor grade.....	Gal.	.40
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.175
Oakum, Navy, unspun.....	Lb.	.175
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.25
Oil, engine, gas, medium, in tins.....	Gal.	.875
Oil, engine, gas, medium, in barrels.....	Gal.	.49
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in cases.....	Gal.	1.125
Oil, engine, gas, in drums, medium.....	Gal.	.65
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.16
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Grease, gear, black.....	Lb.	.10
Grease, yellow, cup, No. 3.....	Lb.	.125
Grease, yellow, cup, No. 5.....	Lb.	.10
Soda, ash.....	Lb.	.04
Waste, cotton, colored.....	Lb.	.175
Waste, cotton, white.....	Lb.	.20

Executive Order.¹

Amending the Executive Order of August 8, 1918, concerning passport control so far as it Applies to the Entry of Aliens into the Panama Canal Zone.

By virtue of the authority vested in me by the Act approved May 22, 1918, entitled "An Act to Prevent in Time of War Departure from and Entry into the United States Contrary to the Public Safety," as extended by the Act approved March 2, 1921, entitled "An Act Making Appropriations for the Diplomatic and Consular Service for the fiscal year ending June 30, 1922," I, Warren G. Harding, President of the United States of America, hereby amend the Executive Order of August 8, 1918, prescribing "Rules and Regulations Governing the Issuance of Permits to Enter and Leave the United States," by the following provision:

Hereafter, aliens entering the Panama Canal Zone shall not be required to present passports visaed by consular officers of the United States, nor shall masters of vessels which are merely passing through the Canal, be required to submit crew lists visaed by American consular officers: Provided, however, That aliens coming to the continental United States or to insular possessions of the United States from the Panama Canal Zone shall be required to present passports visaed by consular officers of the United States at Panama City or Colon, unless they shall have resided in the Panama Canal Zone continuously for at least one year prior to their coming to the United States, or unless they shall have obtained American visas elsewhere: And provided further, That the names of aliens who ship in ports of the Canal Zone on vessels

¹ This Order is being published as Panama Canal Circular No. 601-125.

sailing therefrom to ports of the continental United States or its insular possessions must appear upon crew lists visaed by consular officers of the United States at Panama City or Colon, or by the Shipping Commissioner or Deputy Shipping Commissioners of the Canal Zone.

When the crew list is visaed by the Shipping Commissioner or a Deputy Shipping Commissioner, the usual consular fee will not be collected for such service.

The Executive Order of April 7, 1921, concerning this subject, is hereby revoked.

WARREN G. HARDING.

THE WHITE HOUSE,
October 18, 1921.

[No. 3562.]

Raffles in Panama for Charitable Purposes Only.

The President of Panama has issued a decree (No. 189 of 1921, dated October 13, 1921) requiring that raffles held in Panama be under permit from the chief of police of the municipality in which held, and that permits will be granted by the chiefs of police only "when in their judgment, sufficient guarantee is given that the entire product therefrom is going to be used for some clear and particular charitable purpose.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Charles Best.....	58042	Barbados.....	Colon.....	Mechanical Division...	September 24, 1921.
Robert McKenzie.....	44652	Jamaica.....	Colon.....	R. and F. Agent.....	October 3, 1921.
Rosalio Gonzalez.....	27895	Colombia.....	Colon.....	R. and F. Agent.....	July 14, 1921.
Edward Drake (Drake).....	30755	Barbados.....	Colon.....	R. and F. Agent.....	September 30, 1921.
Felix Appleton.....	29488	Jamaica.....	Colon.....	Mun. Eng. Div.....	October 14, 1921.
John Edwards.....	28509	Jamaica.....	Corozal.....	Mun. Eng. Div.....	October 23, 1921.

Official Circular.

Department of Operation and Maintenance.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., November 8, 1921.

CIRCULAR NO. 660-55:

1. As a step in carrying out the directions of the Secretary of War, as contained in his letter of October 18, 1921, that the Engineer of Maintenance should be relieved of direct charge of various divisions, the following divisions of the Department of Operation and Maintenance will, effective November 10, 1921, be under the supervision of the Assistant Engineer of Maintenance, to whom the officials in charge will report:

Electrical Division.
Division of Lock Operation.
Municipal Engineering Division.
Section of Meteorology and Hydrography.
Section of Surveys.
Office Engineer.
Gatun Dam and Backfill.

2. The Superintendent of Dredging will continue to report to the Engineer of Maintenance, as at present.

JAY J. MORROW,
Governor.

Current Net Prices on Coal, Fuel Oil, and Diesel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

6.05

Engineering

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DEC 12 1921

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

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Volume XV. Balboa Heights, C. Z., November 23, 1921. No. 15.

Exemption from Tolls for Vessels Transiting Canal from Cristobal to Balboa for Sake of Repairs at Balboa Shops.

A cable message from the Chief of Office, in Washington, under date of November 19 advises that the President signed an Executive Order on November 17, exempting from payment of tolls vessels which make the transit of the Canal from Cristobal to Balboa and return for the sole purpose of having repairs made at the Balboa dry dock and shops. The full text of the order will be published upon receipt from Washington. Charges will be made for pilotage and lockages, and towage when used.

The purpose of this change is to make the repair facilities at Balboa, and especially the 1,000-foot dry dock, readily available to ships at the Atlantic terminal as well as the Pacific. Under the previous law it was necessary to collect tolls on ships which made the transit solely for the purpose of repairs. In a few instances ships which had made the transit of the Canal from the Pacific to the Atlantic, paying the usual commercial tolls, met with accidents at the Atlantic terminal which necessitated their returning through the Canal to dry dock at Balboa; and under the law it was necessary to collect tolls for the extra transits. This was a burden to shipping and a handicap to the ready use of the facilities provided at the Canal.

Notice to Mariners.—Obstruction to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., November 21, 1921.

CIRCULAR No. 643-98.

The captain of the steamship *Manavi* reports by radio having passed at 9.45 a. m., on November 21, while in latitude 6° 40' north, longitude 78° 44' west, a large hardwood log about 20 feet long and 3 feet in diameter, almost submerged.

JAY J. MORROW,
Governor.

Supplement No. 5 to Tariff No. 5.—Launches.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., November 4, 1921.

ITEM 6.—LAUNCHES.

(Effective November 10, 1921.)

2. For launch *Rodman*:

First hour or fraction thereof.....	\$10.00
Each succeeding half hour or fraction thereof.....	5.00

2-a. For launch *Patrol*:

First hour or fraction thereof.....	8.00
Each succeeding half hour or fraction thereof.....	4.00

JAY J. MORROW,
Governor, The Panama Canal.
President, Panama Railroad Company.

12	12	25	13	7	40	13	15	50	13	17	40	American.	Munson Steamship Line.	370	0	53	1	24	7	Westport, Oreg.	Lumber.	5,400	5,577	4,222
13	9	00	13	0	25	13	0	25	13	17	32	Dutch.	Fiske & Co.	359	9	48	3	23	0	New York.	Barley.	5,850	4,736	6,457
13	0	25	13	11	15	19	31	13	20	44	50	American.	Standard Oil Co.	449	5	59	6	27	0	New York.	Crude naphtha.	9,178	8,612	6,457
13	12	15	13	13	30	13	20	37	13	21	00	American.	Atl. Gulf & Pacific Steamship Co.	376	4	52	3	24	0	New York.	Lumber, general.	5,845	5,368	4,582
13	0	06	14	6	45	14	13	30	15	14	08	American.	Pacific Mail Steamship Co.	380	0	52	8	24	0	Baltimore.	Lumber, general.	3,088	6,103	4,353
14	1	30	14	7	40	14	15	21	14	16	28	American.	Freeport Sulphur Transp. Co.	355	5	52	5	21	0	New York.	Lumber.	5,400	4,940	3,313
14	6	00	14	8	48	14	15	48	14	23	45	American.	W. R. Leckie & Co.	360	3	51	7	23	1	Tacoma.	General.	1,456	5,957	4,925
14	0	00	14	9	52	14	17	28	14	17	28	Greek.	N. Lykardopoulos	352	2	50	8	24	0	Talcahuano.	Wheat.	5,281	4,418	3,382
14	14	35	15	6	59	15	15	25	16	17	07	British.	Lampont & Holt	440	0	56	2	23	6	Portland.	Fruit and fish.	8,400	7,479	4,750
15	0	00	15	7	51	16	30	15	18	45	07	British.	China Mutual Steam Nav. Co.	392	3	49	2	25	0	Vancouver.	Liverpool.	5,558	5,165	3,211
15	7	30	15	9	45	16	27	20	6	10	British.	Pacific Steam Navigation Co.	216	0	35	1	13	0	Guayaquil	General.	373	1,357	884	
15	12	30	15	13	04	15	21	55	16	6	20	American.	Pacific Steamship Co. (S. B.)	440	0	56	0	28	0	Seattle.	Wheat.	10,483	8,301	6,019
16	7	00	16	14	08	16	15	08	16	01	08	Japanese.	American-Hawaian Line	472	3	57	2	26	0	Seattle.	Wheat.	7,180	9,258	6,912
16	12	15	16	14	08	16	15	08	16	21	01	Japanese.	Kabushiki Kaisha Kaw Zosen	385	0	51	0	37	0	Portland.	Wheat in sacks.	7,196	5,919	4,889
17	14	15	17	16	16	16	23	15	17	8	25	Spanish.	Sota & Aznar	400	5	53	6	24	6	San Francisco.	Barley.	7,675	6,044	4,325
17	14	15	17	9	22	17	25	17	18	00	British.	Prinos Line, Ltd.	468	5	58	5	22	0	Have.	General.	5,440	4,513	9,771	
17	16	18	9	52	18	15	27	18	15	27	Japanese.	Taisio Kaivun, Ltd.	445	0	58	0	28	0	Portland.	Wheat in sacks.	8,999	8,299	5,979	
18	7	30	18	8	52	18	15	06	19	1	30	British.	Chusan Line, Ltd.	350	0	41	2	20	0	Vancouver.	General.	121	3,665	2,577
18	3	20	18	8	52	18	16	30	19	1	30	British.	Pacific Line Navigation Co.	485	4	58	2	27	2	Vancouver.	Liverpool.	5,135	9,936	6,885
18	10	30	18	11	55	18	14	48	18	19	30	American.	Swanwick & Hoyt (S. B.)	380	3	51	2	0	0	Buenos Aires.	General.	2,408	5,660	4,174
18	16	30	18	6	35	19	14	45	19	30	British.	T. & J. Harrison	384	0	50	0	19	0	Seattle.	General.	2,679	5,128	3,697	
18	17	35	19	7	94	19	15	24	19	16	30	British.	North American Steamship Co.	250	0	43	6	20						

² For orders.
³ General and canned goods.
⁴ Wheat, barley, flour, and general.
⁵ Fruit, salmon, and lumber.
⁶ Cotton, metals, grain, sugar, borax, hides, wool, and general.
 Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.
⁷ Ores, cotton, cocoa, coffee, hides, and wool.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Nov. 13	Metapan.	United Fruit Co.	New Orleans via Habana.	Nov. 13	Metapan	United Fruit Co.	Bocas del Toro.
Nov. 13	Achilles	Panama Railroad Steamship Line.	Norfolk.	Nov. 13	Leon XIII.	Spanish Line.	Puerto Colombia.
Nov. 14	Oranje Nassau.	Royal Netherlands W. I. Mail.	Amsterdam via wayports.	Nov. 13	Columbia.	N. O. & S. A. Steamship Line.	New Orleans.
Nov. 14	Heredia.	United Fruit Co.	New Orleans via Port Limon.	Nov. 14	Valerian ⁹ .	British Government.	Port Limon.
				Nov. 15	Oranje Nassau.	Royal Netherlands W. I. Mail.	Port Limon.
Nov. 15		United Fruit Co.	New York via Habana.	Nov. 15	Redwing ¹⁰ .	United States Navy.	High seas.
Nov. 15	Redwing ⁸ .	United States Navy.	Norfolk via wayports.	Nov. 16	Caribbean.	Panama Railroad Cattle Industry.	Cartagena.
Nov. 16	Metapan.	United Fruit Co.	Bocas del Toro.	Nov. 16	Metapan.	United Fruit Co.	New Orleans.
Nov. 16	Tivies.	United Fruit Co.	New York via Kingston.	Nov. 16	Calamares.	United Fruit Co.	New York via Port Limon
Nov. 16	Oranian.	Leyland Line	Liverpool				and Habana.
Nov. 16	Sorata.	Pacific Steam Navigation Co.	Liverpool via wayports.	Nov. 17	Turrialba.	United Fruit Co.	New York via Kingston.

⁸ Tug, towing barge No. 32.
⁹ Gunboat.
¹⁰ Tug.

(Continued on page 214, column 2.)

Tug, towing barge No. 32.

Grounding of a Whale at Cristobal.

A whale which swam in from the Caribbean through the gap between the breakwaters protecting the Atlantic entrance to the Canal grounded in shallow waters to the east of the Canal prism, about a quarter of a mile south of the Cristobal coaling plant, in the evening of November 17. It was unable to extricate itself and remained there, with the top of its head and most of its back showing above water.

A group of Canal employees undertook to salvage the animal. On the morning of November 19 they killed it by machine gun fire directed from a launch and towed it with a tug to pier 6, with the idea of lifting it onto flat cars and hauling it to the abattoir at Mount Hope for rendering. A 75-ton locomotive crane was unable to lift the whale from the water, and after continued efforts the salvage was abandoned, as the animal was not a sperm whale and was decomposing. In the morning of November 21 the tug *Porto Bello* towed the whale into deep water about 12 miles beyond the breakwaters and the carcass was bombed by a Navy aeroplane. Two 160-pound bombs were dropped from a height of 1,000 feet. The first struck the tail and tore a large hole in the carcass, and the second fell opposite the head about 15 feet to one side.

The monster aroused a great deal of interest among residents of the Isthmus. Hundreds of people went out in launches and cayucos to see it while alive, and other hundreds went to see it alongside pier 6. Exact measurements were not taken, but the whale was estimated to be approximately 120 feet in length and to weigh 125 tons. It was a female, of the kind known as flat humpback and is said by men of whaling experience to have been unusually large.

Supplement No. 6 to Tariff No. 5.—Pilotage.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., November 15, 1921.

Item 3.—PILOTAGE.

(Effective November 20, 1921.)

8. Pilotage will not be charged against a vessel stopping in the Canal prism solely for the purpose of embarking or disembarking passengers traveling only from one terminal of the Canal to the other.

JAY J. MORROW,
Governor, The Panama Canal.
President, Panama Railroad Company.

Notice to Mariners.—Obstruction to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., November 15, 1921.

CIRCULAR NO. 643-97.

The master of the steamship *Cedar Branch* reports by radio having passed at 1 a. m., on November 13, while in latitude 9° 51' north, longitude 79° 53' west, 28 miles north and 5 miles east true from the Atlantic breakwater, an obstruction to navigation about 120 feet long and 3 feet above water. Not sufficient light to determine nature. Apparently derelict, with one end raised, probably poop deck.

JAY J. MORROW,
Governor.

Eastbound Cargo Through the Panama Canal.

During the month of October, 1921, the cargo passing through the Panama Canal from Pacific to Atlantic totaled 611,338 tons, or very little less than the record of 619,895 tons established in January, 1921. But while the totals for the 2 months are approximately the same, there is a notable difference in the tonnage of separate commodities and in the relative importance of trade areas. In January the west coast of South America contributed more tonnage than any other region, and Chilean nitrate was the leading commodity. In October the west coast of the United States was far more important, and the leading commodity was wheat. Australia contributed less to the total in October, and the Far East more. These differences are not entirely or even mainly due to seasonal fluctuations, for in October of last year the various trade areas contributed approximately the same percentage to the total traffic as in January, 1921. The following table shows how the trade has shifted:

CARGO FROM PACIFIC TO ATLANTIC.

Origin.	October, 1920.	January, 1921.	October, 1921.
West coast of South America.....	208,547	260,211	120,611
West coast of United States.....	203,608	207,303	372,518
Australasia.....	45,565	110,905	36,605
Far East.....	29,315	21,745	55,373
Other.....	15,318	19,731	26,231
Totals.....	502,353	619,895	611,338

Nitrate shipments in January totaled 195,885 tons. The October shipments, although heavier than in any recent month, amounted to only 54,256 tons. On the other hand, wheat from the west coast of the United States totaled 128,375 tons in October, as compared with 59,606 tons in January. The October shipments of wheat, canned fish (32,761 tons), and phosphates (14,057 tons) were heavier than in any previous month of the year. The shipments of lumber (56,606 tons) and canned fruit (25,547 tons) were heavier than in any previous month of the year save one. The tonnage of barley (67,092 tons) was less than in several recent months, and there were normal shipments of sugar (20,261 tons) and copper (10,060 tons). Beans, peas, and lentils contributed 20,547 tons.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending November 19, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Salvador.....	Pacific Steam Navigation Co.....	November 13.	November 13.		3
Veneruela.....	Pacific Mail Steamship Co.....	November 13.	November 14.	167	
Baja California.....	A. O. Lindvig.....	November 13.	November 14.	54	
Laura C. Hall.....	Pacific Metals Transportation Co.....	November 14.	November 17.		26
Manavi.....	Pacific Steam Navigation Co.....	November 15.	November 15.	1	
Jamaica.....	Pacific Steam Navigation Co.....	November 17.	November 17.		28
La Habra.....	W. Wilhelmsen.....	November 17.	November 17.	1,286	
Colombia.....	Pacific Mail Steamship Co.....	November 18.	November 18.		1
Newport.....	Pacific Mail Steamship Co.....	November 19.	November 19.		3

Passage of the Cruiser "Raleigh."

The light cruiser *Raleigh*, flagship of the North America and West Indies Squadron of the British Navy, with Vice Admiral Packenham

aboard, arrived at Cristobal in the morning of November 23 from the high seas and, after taking oil, made the transit of the Canal. She is bound for Vancouver, via San Diego.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending November 19, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Leon XIII.....	Spanish Line.....		November 13.		298
Jan Van Nassau.....	Royal Netherlands W. I. Mail.....		November 14.		152½
Santa Elisa.....	Grace Line.....	November 14.	November 14.	(¹)	10
Oranje Nassau.....	Royal Netherlands W. I. Mail.....	November 14.	November 15.	21	(¹)
Venezuela.....	Pacific Mail Steamship Co.....	November 14.	November 15.	119	348
Balboa.....	Colombian Maritime Co.....		November 15.		39
Caribbean.....	Panama Railroad Cattle Industry.....		November 15.		76
Colon.....	Panama Railroad Steamship Line.....		November 16.		2,953
Jamaica.....	Pacific Steam Navigation Co.....	November 14.	November 17.	47	180
Heredia.....	United Fruit Co.....	November 14.	November 17.	698	33
Achilles.....	Panama Railroad Steamship Line.....	November 14.	November 19.	12,032	(¹)
Calamares.....	United Fruit Co.....	November 15.	November 16.	462	226
Manavi.....	Pacific Steam Navigation Co.....	November 15.		373	
Metapan.....	United Fruit Co.....	November 16.	November 16.	1	5
Tivives.....	United Fruit Co.....	November 16.	November 17.	115	167
Colombia.....	Pacific Mail Steamship Co.....	November 16.	November 18.	669	174
Oranien.....	Leyland Line.....	November 16.		450	
Sorata.....	Pacific Steam Navigation Co.....	November 16.	November 18.	89	320
Turrialba.....	United Fruit Co.....	November 17.	November 17.	133	7
Palena.....	Chilean Line.....	November 18.		121½	
Oranje Nassau.....	Royal Netherlands W. I. Mail.....	November 18.	November 19.	5	9
Newport.....	Pacific Mail Steamship Co.....		November 19.		2,052
Delft.....	Royal Netherlands W. I. Mail.....	November 18.	November 19.	204	(¹)
San Benito.....	United Fruit Co.....	November 19.	November 19.	10	73

¹ No cargo discharged.

² Pounds.

³ No cargo laded.

Exclusion of Undesirable Persons.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., November 17, 1921.

Notice to steamship agents and all others concerned—Under the authority of the Executive Order of February 6, 1917, the Governor of The Panama Canal is empowered to exclude from the Canal Zone certain classes of persons including "persons of notoriously bad character, persons whose presence would be a menace to the public health or welfare of the Canal Zone, or who would be liable to become a public charge, or who may be suffering from a loathsome or dangerous contagious disease." In the exercise of this and the other powers vested in him by the above-mentioned Executive Order, the Governor of The Panama Canal has always desired that the legitimate business of the various transportation agencies suffer the minimum interference and hindrance.

The recent activities of certain interests in attempting to land women for immoral purposes, possibly in anticipation of the arrival of the fleet makes it imperative for the protection of the morals, health and welfare of the Canal Zone that there be a stringent application of the Executive Order for the Exclusion of Undesirable Persons. This will be done. Transportation agencies may be spared much annoyance and expense by cautioning their agents and the agents of their companies elsewhere, to observe the greatest caution lest transportation be issued to persons falling within an excludable class and therefore liable to deportation.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended November 19:

Steamships *Ansaldo San Giorgio VIII*, manufacture 3 piston rods for oil pump; manufacture 6 nuts for piston rod with cotter pin holes; drill through them; manufacture 6 liner washers for oil pump rod; manufacture new oil pipe, 6 feet long; repair 1 oil cup; manufacture 12 ¾" esk. screws for crosshead slippers; *Murla*, manufacture 2 quadrant springs as per sketch, 21½" over all, 6½" outside diameter, 4½"

inside diameter, 1" square steel; *Peebles*, renew crosshead pin, fit new brass to crosshead pin, refit crank pin brass, remove old and install new piston rod on blower engine; renew crosshead pin, fit new brass to crosshead pin, refit crank pin brass to circulating engine; dredge *Cascadas*, remove broken stern spud and replace with a good order spud; barges *No. 1*, dock, stage, and clean; scale bottom up to light load line; paint bottom up to light load line; drain tanks and redrive bad rivets; *No. 148*, dock, stage, and clean; scale bottom up to light load line; paint bottom up to light load line; drain tanks and redrive bad rivets; compressor barge *No. 27*, dock, stage, and clean; scale bottom up to light load line; paint bottom up to light load line; drain tanks and redrive bad rivets.

PREVIOUSLY REPORTED.

Launch *Wilson B. Gaither*, scrape and clean bottom; perform general hull repairs; steamship *Panama*, reboiling and general repairs to machinery and hull; launch *Pacific*, general repairs to hull; crane boat *La Valley*, perform heavy hull repairs; barges *No. 136*, dock, stage, and clean; scale and paint bottom to light load line; perform heavy hull and strongback repairs; *No. 133*, dock, stage, and clean; scale and paint bottom to light load line; perform heavy hull and strongback repairs.

The following vessels were at the Cristobal shops for repairs during the week ended November 22:

Steamships *Achilles*, paint boot topping; ease doors in coal bunkers; remetal and machine H. P. crank brasses, crosshead brasses, and L. P. guide shoes, etc.; *Heredia*, repair ice machine, manufacture 2 neck bushings, 1 valve, and 1 bushing; barge *No. 50*, clean and paint hull; steamships *Steel Worker*, repair telemotor, etc.; *Delft*, test and repair coils for CO 2 machine; repair 2 pipes; *Oranje Nassau*, make 3 rings as directed; *Palena*, electric weld boiler; *Allianca*, furnish 10 men to clean boilers.

PREVIOUSLY REPORTED.

U. S. S. *O-12*, renew all rivets in engine foundation; overhaul all sea valves; overhaul steering and diving gear, etc.; launch *Gloriana*, repair hull and keel; renew awnings; overhaul engine, etc.; *Ampat*, manufacture, fit, and install new rudder; install asbestos lining on both boilers; renew tubes in boilers, etc.; supply boat *No. 1*, weld and reinstall cylinder on main engine, *Colon*, roll tubes in after port boiler; repair steam line to whistle; manufacture hatch battens, etc.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective November 1, 1921:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.375
Brass, sheet, average.....	Lb.	.41
Bronze, Tobin, average.....	Lb.	.31
Gasoline, motor grade.....	Gal.	.40
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.175
Oakum, Navy, unspun.....	Lb.	.175
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Pbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.25
Oil, engine, gas, medium, in tins.....	Gal.	.675
Oil, engine, gas, medium, in barrels.....	Gal.	.49
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in cases.....	Gal.	1.125
Oil, engine, gas, in drums, medium.....	Gal.	.65
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.16
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Grease, gear, black.....	Lb.	.10
Grease, yellow, cup, No. 3.....	Lb.	1.25
Grease, yellow, cup, No. 5.....	Lb.	.10
Soda, ash.....	Lb.	.04
Waste, cotton, colored.....	Lb.	.175
Waste, cotton, white.....	Lb.	.20

Official Circular.

Prices of Scrap.

THE PANAMA CANAL,
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., November 10, 1921.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective November 15, 1921, the following prices will be allowed by the Supply Department for scrap turned in by the various departments and divisions of The Panama Canal. The selling prices to departments and divisions, employees, and to individuals and companies are also indicated:

Kind of scrap.	Credit to be allowed divisions.	ISSUE AND SALE PRICES.	
		To departments of The Panama Canal.	To employees and I. and C.
	Short ton.	Short ton.	Short ton.
Cast iron, including car wheels.....	\$6.00	\$7.00	\$30.00
Miscellaneous wrought iron and steel.....	3.00	4.00	30.00
Rail, scrap, grade No. 4.....	3.00	4.00	30.00
Rail, relaying, grade No. 2.....	20.00	21.00	(¹)
Rail, relaying, grade No. 3.....	11.00	12.00	(¹)
Aluminum.....	\$8.00	\$9.00	\$25.00
Babbitt.....	2.00	3.00	10.00
Bags and burlap.....	.50	1.00	
Brass, mixed.....	4.00	5.00	10.00
Brass borings and turnings.....	4.00	5.00	10.00
Bronze screenings.....	4.00	5.00	15.00
Canvas.....	.50	1.00	
Copper, mixed.....	8.00	9.00	20.00
Cork.....	1.00	2.00	10.00
Hose.....	.50	1.00	6.00
Lead.....	1.00	2.00	5.00
Leather.....	.50	1.00	3.00
Pewter.....	10.00	11.00	50.00
Rags.....	.50	1.00	5.00
Rope.....	.50	1.00	5.00
Rubber.....	.50	1.00	6.00
Tool steel.....	5.00	6.00	25.00
Zinc.....	1.00	2.00	5.00

¹ None to be sold.

R. K. MORRIS,
Chief Quartermaster.

Current Net Prices on Coal, Fuel Oil, and Diesel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 209.

PORT OF CRISTOBAL—continued.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
Nov. 17.....	Turrialba.....	United Fruit Co.	Nov. 17.....	Trivies.....	United Fruit Co.
Nov. 18.....	Oranje Nassau.....	Royal Netherlands W. I. Mail	Nov. 17.....	Heredia.....	United Fruit Co.
Nov. 19.....	San Benito.....	United Fruit Co.	Nov. 17.....	Colon.....	Panama Railroad Steamship Line.
			Nov. 19.....	Achilles.....	Panama Railroad Steamship Line.
			Nov. 19.....	Oranje Nassau.....	Royal Netherlands W. I. Mail
			Nov. 19.....	San Benito.....	United Fruit Co.
11 Collier.			PORT OF BALBOA.		
Nov. 13.....	Baja California.....	A. O. Lindvig.	Nov. 14.....	Baja California.....	A. O. Lindvig.
Nov. 16.....	Derblay.....	General Steamship Corp. (S. B.)	Nov. 16.....	Derblay.....	General Steamship Corp. (S. B.)
			* Other than ships passing through the Canal.		
					Buenaventura. San Francisco.

For—
New York via Colombia and Kingston.
New York via Bocas del Toro and Habana.
New York via Haiti.
Norfolk.
Puerto Colombia.
Boston, Mass.

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CANAL WORK IN OCTOBER.

The following is the report of the Governor to the Secretary of War,
of Canal work in the month of October, 1921:

BALBOA HEIGHTS, C. Z., November 19, 1921.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for
the month of October, 1921.

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal, as compared
with the preceding month and with the corresponding month of last year, was as
follows:

	October, 1921.	September, 1921.	October, 1920.
Commercial vessels.....	255	221	238
Noncommercial vessels.....	20	37	26
Launches, etc. (under 10 tons measurement).....	6	2	7
Total vessels and craft through Canal.....	281	260	271

COMMERCIAL TRAFFIC.¹

Tolls.

Under the present dual method of assessing tolls, the revenue from this source
was \$1,047,935.62. With the exception of the months of January and March of
the present year, this is the greatest amount collected in tolls since the opening of
the Canal. Had the net tonnage as determined by the Panama Canal rules of mea-
surement been used in all cases as a basis for collecting tolls, the above amount would
have been increased by \$192,154.54. This additional revenue would have been con-
tributed, by nationality of ships, as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$32,064.96	\$38,001.35	\$70,066.31
Chilean.....	3,506.20	4,006.15	7,512.35
Danish.....	1,306.10	4,210.15	5,516.25
Dutch.....	1,664.65	3,217.00	4,881.65
French.....	644.65	368.07	1,012.72
Japanese.....	8,056.27	2,937.65	10,993.92
Norwegian.....	2,661.10	673.55	3,334.65
Peruvian.....	4,666.65	5,068.65	9,735.30
Spanish.....		335.65	335.65
Swedish.....	2,423.35	2,096.80	4,520.15
United States.....	38,842.58	35,403.01	74,245.59
Totals.....	95,836.51	96,318.03	192,154.54

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant ships chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial."

The additional tolls paid by American vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$17,855.15	\$15,440.21	\$33,295.36
United States and Canal Zone.....	348.50	580.70	929.20
United States and foreign ports.....	17,907.48	12,487.55	30,395.03
United States and possessions.....	1,936.00	3,172.50	5,108.50
Between foreign ports.....	795.45	3,722.05	4,517.50
Totals.....	38,842.58	35,403.01	74,245.59

Of the above \$192,154.54 additional revenue that would have been collected by using the Panama Canal rules of measurement exclusively, \$6,518.40 represents the additional tolls that would have been collected on account of deck cargo.

COMPARATIVE TRAFFIC STATISTICS.

The following tabulations permit a ready comparison of commercial traffic through the Canal in October, 1921, with that of preceding months along the lines indicated at the head of the various tables.

TONNAGE, TOLLS, AND CARGO CARRIED.

	October, 1921.	September, 1921.	October, 1920.	Average month for past year.
United States equivalent net tonnage.....	866,196	748,744	762,013	776,739
Panama Canal net tonnage.....	1,069,554	925,137	935,579	952,829
Registered gross tonnage.....	1,335,812	1,167,220	1,190,936	1,205,509
Registered net tonnage.....	863,676	743,574	754,540	761,015
Tolls.....	\$1,047,935.62	\$892,001.54	\$911,825.58	\$939,684.44
Tons of cargo carried.....	985,775	754,894	991,066	913,330

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.10	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,308
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,903
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,593	14	61,980	62,318.75	79,129

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED, PER VESSEL.

	October, 1921.	September, 1921.	October, 1920.
United States equivalent net tonnage.....	3,397	3,358	3,202
Panama Canal net tonnage.....	4,194	4,186	3,931
Registered gross tonnage.....	5,238	5,282	5,004
Registered net tonnage.....	3,387	3,365	3,170
Tolls.....	\$4,109.55	\$4,036.21	\$3,831.32
Tons of cargo (all vessels).....	3,866	3,416	4,139
Tons of cargo (laden vessels only).....	4,694	4,289	4,164

COMMODITY STATISTICS.

A classification of cargo passing through the Canal during the month of October, 1921, has been compiled from declarations of cargo submitted by the ships' masters, and while incomplete, is indicative of the kind and quantity of the various commodities carried by ships transiting the Canal. From the cargo declarations and manifests submitted, it was possible to classify 72 per cent of all cargo passing from the Atlantic to the Pacific, and 93 per cent from Pacific to Atlantic ports. For October, in the Pacific to Atlantic traffic, 5 items, viz., wheat, barley, canned goods, lumber, and nitrate, made up 60 per cent of all cargo. A brief summary of the principal items is shown herewith:

Commodity.	October, 1921.	September, 1921.	August 1921.	July, 1921.
Atlantic to Pacific.				
Oil:				
Crude.....	68,891	17,981	36,454	14,491
Refined.....	26,961	19,781	28,685	15,635
Manufactured goods:				
Iron and steel.....	48,074	50,488	28,373	52,574
Machinery, textiles, etc.....	14,659	19,331	8,312	21,440
Coal and coke.....	21,512	16,040	24,066	8,258
Cotton.....	14,725	19,207	34,482	26,083
Ammonia.....	12,072	4,749	6,997	921
Metals.....	8,880	8,467	5,286	8,575
Phosphates.....	6,001	5,888	13	...
Coffee.....	3,071	2,746	1,180	737
Glucose.....	2,899	576	91	291
Tobacco.....	2,879	2,452	893	625
Paper.....	2,813	1,210	1,508	1,574
Cement.....	2,681	1,834	3,511	1,871
Liquors.....	1,397	1,234	174	1,419
Other and general.....	136,922	128,736	137,945	103,946
Total cargo.....	374,437	300,720	317,970	258,440
Pacific to Atlantic.				
Wheat.....	128,375	75,486	80,231	99,267
Barley.....	67,092	107,831	77,661	27,780
Canned goods:				
Fish.....	32,761	17,232	7,972	10,596
Fruit.....	25,547	35,427	10,921	10,482
Miscellaneous.....	2,523	4,302	2,875	2,906
Lumber.....	56,606	26,750	35,054	31,699
Nitrate.....	54,256	22,758	39,349	26,051
Beans, peas, lentils, etc.....	20,547	6,774	5,571	5,762
Flour.....	19,000	15,101	18,946	28,940
Sugar.....	20,261	6,657	49,406	48,394
Phosphates.....	14,057	...	6,650	7,500
Cold storage:				
Beef and mutton.....	10,431	6,534	21,797	21,723
Miscellaneous.....	8,308	4,066	9,861	12,102
Cotton.....	12,592	5,392	4,140	3,281
Metals.....	11,078	10,516	21,425	11,301
Copra.....	9,196	6,817	3,115	2,450
Wool.....	9,081	5,522	10,468	14,030
Seed, cotton, sesame, etc.....	7,936	2,347	5,358	5,792
Coffee.....	4,594	6,013	6,710	6,675
Fruit, fresh and dried.....	4,162	6,664	5,192	3,274
Tea.....	3,950	546	444	259
Cacao.....	3,844	4,327	1,469	4,072
Ivory nuts.....	2,811	3,164	1,492	2,368
Other and general.....	82,330	73,948	95,196	63,838
Total cargo.....	611,338	454,174	521,303	450,542

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

While all cargo-carrying vessels pay tolls on their net tonnage, as determined by established rules for measuring their available cargo-carrying space, yet the rate of such tolls per cargo ton furnishes interesting data, varying as it does not only in different ships but in vessels of different nationalities. The average rate of tolls paid on each ton (2,240 pounds) of cargo passing through the Panama Canal from the Atlantic to the Pacific was \$1.09, and from the Pacific to the Atlantic \$0.79 per ton, with a general average of \$0.90 per ton. The average rate paid per cargo ton, by nationality of vessels, is shown in the following statement:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.02	\$0.76	\$0.85
Chilean.....	1.86	2.51	2.11
Danish.....	1.04	.64	.72
Dutch.....	1.48	.50	.61
French.....	12.37	1.06	3.33
Japanese.....	.79	.66	.73
Norwegian.....	2.03	.75	1.23
Peruvian.....	4.97	.72	1.27
Spanish.....		.62	.62
Swedish.....	2.30	.50	.94
United States.....	1.11	.87	1.00
Average rate all ships, October, 1921.....	1.09	.78	.90
Average rate all ships, September, 1921.....	1.23	.77	.95
Average rate all ships, August, 1921.....	1.18	.88	.99

The rate of tolls per cargo ton paid by vessels transiting the Canal in October, 1921, varied from \$47.88 per cargo ton paid by the steamship *Sarpfos*, Norwegian registry, bound from New York to Guayaquil, and carrying 23 tons of cargo, on which tolls of \$1,101.25 were assessed; to 44.2 cents per cargo ton, paid by the steamship *Reading*, British registry, bound from San Francisco to Hull, and carrying 6,728 tons of barley, on which tolls of \$2,971.25 were assessed.

ORIGIN AND DESTINATION OF TONNAGE.

Analyzing the traffic through the Canal during October it will be seen that in point of tonnage more than 50 per cent of the Atlantic to Pacific traffic was routed to the west coast of the United States and Canada, and in tons of cargo carried more than 36 per cent was destined for this area. Similarly, in the Pacific to Atlantic traffic more than 50 per cent of all tonnage and 63 per cent of all cargo through the Canal in October originated from the west coast of the United States and Canada.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past 12 months, the figures representing the Panama Canal net tonnage.

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscel- laneous.	Total.
October, 1920.....	275,496	126,020	39,600	24,205	5,215	470,536
November.....	275,829	104,856	43,350	20,399	23,517	467,951
December.....	332,418	128,739	53,070	36,097	4,608	554,932
January, 1921.....	284,111	129,939	60,564	21,373	21,732	517,719
February.....	268,727	75,532	55,859	18,844	16,271	435,233
March.....	291,937	188,548	85,275	20,731	27,100	613,591
April.....	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,180	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
Average month.....	269,123	127,701	43,262	23,306	20,110	483,592

DESTINATION OF ALL TONNAGE FROM ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
October, 1920.	82,879	203,773	91,990	79,380	12,414	470,536
November.	142,693	160,404	43,431	100,879	20,544	467,951
December.	91,963	248,176	99,594	84,168	31,031	554,932
January, 1921.	163,295	170,861	56,082	94,583	32,898	517,719
February.	119,271	168,904	66,958	62,507	17,593	435,233
March.	139,889	146,075	118,053	153,910	55,664	613,591
April.	141,584	135,622	131,637	64,155	19,508	492,506
May.	125,091	103,143	82,499	82,582	21,114	414,429
June.	143,217	106,369	83,063	46,298	36,355	415,302
July.	194,358	45,391	63,969	58,062	41,271	403,051
August.	164,577	106,886	94,486	70,551	50,719	487,219
September.	268,758	90,105	80,242	53,309	38,220	530,634
October.	280,483	78,532	100,332	69,057	42,771	571,175
Average month.	148,140	140,476	84,334	79,199	31,443	483,592

ORIGIN OF ALL TONNAGE FROM PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Australasia.	Far East.	Miscellaneous.	Total.
October, 1920.	168,231	206,832	48,824	16,686	24,470	465,043
November.	152,620	193,348	67,251	32,687	16,018	461,924
December.	145,192	239,389	58,175	11,146	19,084	472,986
January, 1921.	151,034	230,437	115,206	26,843	53,084	576,604
February.	173,815	226,242	34,616	22,473	24,459	481,605
March.	163,294	203,002	62,652	28,525	41,754	499,227
April.	139,495	168,585	86,560	29,756	38,601	462,997
May.	174,128	137,258	81,086	12,407	45,309	450,188
June.	116,521	112,474	75,400	18,740	23,040	346,175
July.	174,412	99,745	70,124	41,084	22,197	407,562
August.	229,629	110,248	68,661	20,628	48,894	478,057
September.	218,453	84,212	30,814	14,762	46,262	394,503
October.	252,645	124,560	41,436	37,720	42,018	498,379
Average month.	167,235	167,648	66,614	22,978	33,598	458,073

DESTINATION OF ALL TONNAGE FROM PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
October, 1920.	203,465	146,741	62,710	29,144	22,983	465,043
November.	209,701	160,628	49,066	23,801	18,728	461,924
December.	198,618	157,070	69,008	34,099	14,191	472,986
January, 1921.	293,836	188,133	49,947	23,295	21,393	576,604
February.	175,324	163,690	74,363	18,056	50,174	481,605
March.	190,683	189,793	83,700	21,228	13,823	499,227
April.	189,209	197,311	53,334	22,043	1,100	462,997
May.	201,548	140,940	73,705	21,549	12,446	450,188
June.	155,147	136,292	18,324	26,112	10,300	346,175
July.	205,690	134,047	23,123	28,770	15,932	407,562
August.	231,830	194,279	27,256	22,022	2,670	478,057
September.	204,820	140,555	26,478	17,114	5,536	394,503
October.	259,613	170,189	18,222	30,955	19,400	498,379
Average month.	204,989	162,457	50,918	23,936	15,773	458,073

In the foregoing tabulations it will be seen that the two regions showing the greatest increase of traffic are the west coast of the United States and Europe. This increase is due in part to the heavy grain shipments from the west coast of the United States to the British Isles and continental Europe, there having been 22 full cargoes of wheat and barley through the Canal in October, while in addition these 2 grains formed a large part of many mixed cargoes.

The amount of tonnage routed to and from the west coast of South America was considerably beneath the normal tonnage as represented by the average month for the past year. The nitrate shipments, while greater than for the past few months, totaled only about a third of the heavy shipments of a year ago.

Oil shipments from the east coast of Mexico were the highest since June, 1921, but were less than half the normal shipments of several months ago. Traffic to and from the Far East was a little above the normal while that to Australasia was below the average for the past year. Tables on pages 232 and 233 show the origin and destination of all cargo passing through the Canal.

THE PANAMA CANAL RECORD

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Canal by trade routes for October, 1921, has previously been compiled and was published in THE PANAMA CANAL RECORD under date of November 9, 1921. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes. Traffic for the preceding month and for the corresponding month of last year is also shown for comparative purposes.

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	October, 1921.	September, 1921.	October, 1920.	October, 1921.	September, 1921.	October, 1920.
	Number of vessels.			Number of vessels.		
Europe and United States.....	27	18	6	29	24	22
United States coastwise.....	22	25	13	19	15	9
United States and Far East.....	19	15	18	4	2	4
Cristobal and South America.....	11	12	14	12	11	16
United States and South America.....	10	9	22	12	8	20
Europe and Australasia.....	8	4	5	6	4	5
Europe and South America.....	8	10	16	12	9	13
United States and Australasia.....	4	4	10	1	1	3
Europe and Canada.....	3	3	.....	5	6	1
Mexico and South America.....	1	1	7	2	2	8
Mexico and United States.....	1	.....	.....	2	2	3
Miscellaneous routings.....	17	27	8	20	9	27
Totals.....	131	128	119	124	93	131
	Panama Canal net tonnage.			Panama Canal net tonnage.		
Europe and United States.....	135,184	78,307	29,339	125,113	112,759	108,076
United States coastwise.....	113,712	134,239	51,477	96,731	88,111	42,714
United States and Far East.....	93,947	73,761	91,990	19,465	8,377	16,686
Cristobal and South America.....	16,733	17,658	20,644	18,077	12,409	26,819
United States and South America.....	27,034	30,257	83,306	36,182	27,358	63,847
Europe and Australasia.....	46,421	30,603	36,105	36,498	26,084	32,338
Europe and South America.....	28,832	36,538	60,576	53,704	34,236	52,725
United States and Australasia.....	17,558	18,655	43,275	4,938	4,730	16,486
Europe and Canada.....	15,994	15,086	.....	26,043	31,741	4,125
Mexico and South America.....	5,311	4,408	34,046	9,719	9,587	40,954
Mexico and United States.....	1,121	.....	.....	6,407	10,506	16,203
Miscellaneous routings.....	69,328	91,122	19,778	65,502	28,605	44,070
Totals.....	571,175	530,634	470,536	498,379	394,503	465,043
	Tons of cargo carried.			Tons of cargo carried.		
Europe and United States.....	10,891	280	8,981	209,788	178,588	156,379
United States coastwise.....	86,442	72,620	44,659	105,951	104,642	46,797
United States and Far East.....	123,689	105,935	125,642	27,918	11,516	28,370
Cristobal and South America.....	2,309	2,362	13,689	11,107	8,424	21,131
United States and South America.....	10,398	8,415	91,884	31,664	21,979	88,348
Europe and Australasia.....	35,426	19,686	32,967	33,305	20,192	23,686
Europe and South America.....	13,332	12,365	30,014	67,808	44,570	64,752
United States and Australasia.....	16,432	16,900	65,355	3,300	5,828	21,879
Europe and Canada.....	11,114	12,115	.....	39,985	47,713	6,000
Mexico and South America.....	9,500	7,889	54,161	.....	.....	.....
Mexico and United States.....	.....	.....	.....	3,233	.....	6,000
Miscellaneous routings.....	54,904	42,153	21,361	77,279	10,722	39,011
Totals.....	374,437	300,720	488,713	611,338	454,174	502,353

SHIPS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships and other noncargo-carrying vessels, has been relatively high the past 2 months. Other than tankers, the majority of these vessels were en route from Europe and the eastern coast of the United States to the western coast of the United States and Canada. A number of these vessels were charged full tolls due to carrying a greater quantity of coal than allowed under ballast rates. The following tabulation shows by nationality all cargo-carrying ships transiting the Canal without cargo during October:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
French.....				1	2,096	\$1,616.25
British.....	12	59,246	\$47,493.37	2	9,719	6,997.68
Dutch.....	2	9,548	6,874.56			
Greek.....	2	7,807	7,563.60			
Japanese.....	9	39,925	39,269.02			
Norwegian.....	3	11,242	10,250.19			
Spanish.....	1	4,235	3,049.20			
Swedish.....	1	5,661	4,075.92			
United States.....	5	15,170	12,714.72	2	13,276	9,646.41
Totals.....	35	152,834	131,290.58	5	25,091	18,260.34

LATIN-AMERICAN TRAFFIC.

The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality:

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	United States equivalent.	Panama Canal net.	Registered.		Tolls.	Tons of cargo.
				Gross.	Net.		
British.....	15	32,460	40,398	51,547	32,513	\$40,109.22	34,421
United States.....	11	25,530	30,910	39,552	24,496	29,546.08	23,267
Chilean.....	3	6,028	9,201	12,312	6,853	7,535.00	4,053
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	931
Norwegian.....	3	2,592	4,057	4,603	2,574	3,007.12	72
French.....	2	6,374	7,028	9,622	6,104	7,788.95	524
Japanese.....	1	5,513	6,385	9,049	6,502	6,891.25	8,949
Danish.....	1	3,127	4,090	4,950	3,163	3,908.75	3,003
Dutch.....	1	1,603	3,057	2,655	1,625	2,003.75	1,354
Swedish.....	1	1,091	1,227	1,825	1,282	1,363.75	832
October, 1921.....	41	88,017	114,095	148,597	91,389	106,777.62	77,406
September, 1921.....	43	92,630	120,305	158,344	95,074	110,316.04	62,130
October, 1920.....	66		212,902	278,230	175,320		204,009

PACIFIC TO ATLANTIC.

British.....	21	55,663	70,047	89,769	54,370	\$65,417.53	65,187
United States.....	14	34,325	40,321	54,007	34,901	37,101.41	29,425
Chilean.....	3	4,549	7,915	9,080	5,505	5,686.25	2,262
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	6,368
French.....	2	5,755	6,242	8,718	5,561	6,116.25	4,250
Norwegian.....	2	3,934	4,550	5,594	3,934	4,786.45	6,355
Danish.....	1	4,257	5,317	6,645	4,244	5,321.25	6,193
Dutch.....	1	2,224	3,807	3,623	2,229	2,780.00	5,344
October, 1921.....	47	114,406	145,941	189,888	117,021	131,832.89	125,384
September, 1921.....	40	95,813	117,730	161,562	100,156	107,251.34	81,621
October, 1920.....	74		238,417	314,676	195,235		218,297

CLASSIFICATION OF COMMERCIAL TRAFFIC.¹

A statement of this month's commercial traffic, classified by nationality of vessels, is shown in the following tabulations:

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific.							
British.....	42	146,288	186,631	226,782	146,906	\$170,515.92	120,358
Chilean.....	3	6,028	9,201	12,312	6,853	7,535.00	4,053
Danish.....	2	8,318	9,753	11,863	8,381	10,397.50	9,953

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant ships chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial" and are included elsewhere in this report.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific—Contd.							
Dutch.....	3	8,684	12,605	14,026	8,675	\$8,878.31	1,354
French.....	4	10,864	11,554	15,743	10,037	13,220.15	1,069
Greek.....	2	7,553	7,807	9,253	5,714	7,563.60	
Japanese.....	19	78,302	87,605	114,712	77,909	90,495.17	65,067
Norwegian.....	6	15,822	19,805	23,059	14,034	18,103.94	3,872
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	931
Spanish.....	1	3,674	4,235	5,754	3,452	3,049.20	
Swedish.....	3	8,833	12,344	13,025	9,848	9,672.17	1,838
United States.....	43	161,648	201,893	249,382	160,503	197,940.22	165,942
Totals.....	131	459,713	571,175	708,363	458,589	541,994.93	374,437
From Pacific to Atlantic.							
British.....	48	159,634	197,605	247,708	155,298	194,987.53	247,137
Chilean.....	3	4,549	7,915	9,080	5,505	5,686.25	2,262
Danish.....	5	21,164	25,415	30,526	22,691	26,287.85	40,774
Dutch.....	2	4,420	7,275	7,307	4,436	5,525.00	11,044
French.....	2	5,755	6,242	8,718	5,561	6,116.25	4,250
Japanese.....	10	34,845	38,021	49,671	33,348	53,177.55	64,303
Norwegian.....	2	3,934	4,550	5,594	3,934	4,786.45	6,355
Panaman.....	1	104	120	193	103	86.40	
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	6,368
Spanish.....	1	3,031	3,437	4,648	2,877	3,788.75	6,100
Swedish.....	1	2,248	4,089	3,767	2,865	2,810.00	5,604
United States.....	46	163,100	195,968	247,785	162,192	198,064.91	217,141
Totals.....	124	406,483	498,379	627,449	405,087	505,940.69	611,338
Combined traffic, both ways.							
British.....	90	305,922	384,236	474,490	302,204	365,503.45	367,495
Chilean.....	6	10,577	17,116	21,392	12,358	13,221.25	6,315
Danish.....	7	29,482	35,168	42,389	31,072	36,685.35	50,727
Dutch.....	5	13,104	19,880	21,333	13,111	14,403.31	12,398
French.....	6	16,619	17,796	24,461	15,598	19,336.40	5,319
Greek.....	2	7,553	7,807	9,253	5,714	7,563.60	
Japanese.....	29	113,147	125,626	164,383	111,257	143,672.72	129,370
Norwegian.....	8	19,756	24,355	28,653	17,968	22,890.39	10,227
Panaman.....	1	104	120	193	103	86.40	
Peruvian.....	6	7,398	15,484	24,904	12,554	9,247.50	7,299
Spanish.....	2	6,705	7,672	10,402	6,329	6,837.95	6,100
Swedish.....	4	11,081	16,433	16,792	12,713	12,482.17	7,442
United States.....	89	324,748	397,861	497,167	322,695	396,005.13	383,083
Totals.....	255	866,196	1,069,554	1,335,812	863,676	1,047,935.62	985,775

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	95	417,772	\$410,277.60	115	472,988	\$476,887.95
Ballast (excess fuel).....	12	52,816	59,063.30			
Ballast.....	23	100,018	72,227.28	5	25,091	18,260.34
Dredge.....	1	569	426.75			
Survey ship (magnetic).....				1	180	216.00
Tug.....				1	120	86.40
Warships.....				2	20,980	10,490.00
Total commercial.....	131	571,175	541,994.93	124	498,379	505,940.69
Motor ships.....	5	26,497	24,359.67	5	24,886	23,556.25
Motor schooners.....	1	72	78.75	2	144	157.50
Schooner.....	1	163	195.60			

* Indicates displacement tonnage.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of, and amount of cargo carried by vessels transiting the Canal free of tolls. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonscagoing craft transiting the Canal, these not being included in the commercial traffic.

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States Naval vessels:						
Battleship.....	1	16,000	\$8,000.00			
Transport.....	1	4,944	5,932.00			
Tugs.....	3	2,510	1,255.00	2	1,510	\$755.00
Submarine chasers.....	2	154	77.00	2	154	77.00
Patrol yacht.....	1	2,600	1,300.00			
Gunboat.....				1	3,200	1,600.00
Supply ship.....				1	4,004	4,804.80
Submarines.....				3	1,455	727.50
United States Army vessels:						
Transport.....	1	4,331	5,197.20			
Mine layer.....				1	46	33.12
Vessel with naval supplies.....	1	4,099	4,918.80			
Launches, etc.....	6	7	5.40			

* Indicates displacement tonnage.

Cargo through the Canal free of tolls:

From Atlantic to Pacific.....	tons..	10,575
From Pacific to Atlantic.....	tons..	2

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of October, 1921, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Vessels entering port but not transiting Canal:			
Number entered.....	60	6	66
Number cleared.....	58	6	64
Registered gross tonnage of above:			
Entered.....	288,151	14,869	303,020
Cleared.....	276,636	14,869	291,505
Registered net tonnage of above:			
Entered.....	171,460	9,340	180,800
Cleared.....	162,313	9,340	171,653
Vessels transiting the Canal and handling passengers or cargo at port:			
Number entered.....	47	39	86
Number cleared.....	45	38	83
Registered gross tonnage of above:			
Entered.....	205,831	169,618	375,449
Cleared.....	199,829	162,851	362,680
Registered net tonnage of above:			
Entered.....	130,139	100,777	230,916
Cleared.....	126,619	96,446	223,065
All vessels entering and clearing, including those transiting the Canal:			
Number entered.....	305	266	571
Number cleared.....	304	265	569
Registered gross tonnage of above:			
Entered.....	1,651,837	1,415,948	3,067,785
Cleared.....	1,650,327	1,413,197	3,063,524
Registered net tonnage of above:			
Entered.....	1,062,797	908,469	1,971,266
Cleared.....	1,061,492	906,906	1,968,398
Transit cargo arriving.....	tons.. 982,337	979,362	1,961,699
Transit cargo clearing.....	tons.. 987,309	992,445	1,979,754
Cargo received for transshipment.....	tons.. 22,610	25	22,635
Cargo transhipped.....	tons.. 21,468	4	21,472
Local cargo arriving.....	tons.. 31,155	13,815	44,970
Local cargo shipped.....	tons.. 3,367	234	3,601
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received.....	tons.. 37,453	2,164	39,617
Dispatched.....	tons.. 24,583	989	25,572
Rehandled.....	tons.. 1,092	77	1,169
Stevedored.....	tons.. 28,474	283	28,757
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	58	3	61
Panama Railroad vessels.....	3		3
United States Army vessels.....	2	2	4
Total vessels supplied with bunker coal.....	63	5	68

	Cristobal.	Balboa.	Total.
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	15,210	591	15,801
Panama Railroad vessels..... tons..	553		553
United States Army vessels..... tons..	42	35	77
Total coal supplied to vessels..... tons..	15,805	626	16,431
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	529	145	674
Panama Railroad, excepting vessels..... tons..	448		448
United States Army, excepting vessels..... tons..	336		336
Individuals and companies..... tons..	350		350
Total issues from Panama Canal deposits:			
October, 1921..... tons..	17,468	771	18,239
September, 1921..... tons..	13,759	1,745	15,504
October, 1920..... tons..	29,178	3,291	32,469
Coal on hand, November 1, 1921..... tons..	136,790	34,588	171,378
Coal on hand, October 1, 1921..... tons..	126,843	35,359	162,202
Coal received during October, 1921..... tons..	27,415		27,415
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels..... tons..	1,009	76	1,085
Coal on hand, November 1, 1921..... tons..	71,155	8,073	79,228
Coal on hand, October 1, 1921..... tons..	65,958	8,149	74,107
Coal received during October, 1921..... tons..	6,206		6,206
Fuel oil issues, miscellaneous:			
To Panama Canal departments..... bbls..	4,283	24,656	28,939
To Panama Railroad..... bbls..	749		749
To Army and Navy..... bbls..	204	497	701
Total issues..... bbls..	5,236	25,153	30,389
Fuel oil on hand, November 1, 1921..... bbls..	65,156	47,778	112,934
Fuel oil on hand, October 1, 1921..... bbls..	70,392	72,931	143,323
Diesel oil issued during the month..... bbls..	191		191
Diesel oil on hand, November 1, 1921..... bbls..	50,988	966	51,954
Diesel oil on hand, October 1, 1921..... bbls..	51,179	966	52,145
Oil pumped for individuals and companies..... bbls..	252,372	120,053	372,425
Miscellaneous transfers..... bbls..	3,680	2,967	6,647
Total oil handled..... bbls..	261,479	148,173	409,652
Vessels furnished with commissary supplies:			
Commercial, other than Panama Railroad.....	72	40	112
Panama Railroad.....	8		8
United States Government.....	9	9	18
Totals.....	89	49	138
Commissary sales to commercial vessels:			
Ice.....	\$1,220.41	\$927.70	\$2,148.11
Wholesale groceries.....	2,998.16	593.09	3,591.25
Wholesale cold storage.....	19,774.43	5,659.52	25,433.95
Laundry.....	74.80	2,919.81	2,994.61
Miscellaneous.....	903.27	228.19	1,131.46
Totals.....	24,971.07	10,328.31	35,299.38
Commissary sales to Panama Railroad vessels:			
Ice.....	\$37.80		\$37.80
Wholesale groceries.....	1,507.70		1,507.70
Wholesale cold storage.....	3,169.64		3,169.64
Laundry.....	28.50		28.50
Miscellaneous.....	334.21		334.21
Totals.....	5,077.85		5,077.85
Commissary sales to United States Government vessels:			
Ice.....	\$161.12	\$140.88	\$302.00
Wholesale groceries.....	600.00	2,672.50	3,272.50
Wholesale cold storage.....	529.21	5,369.19	5,898.40
Laundry.....	17.52		17.52
Miscellaneous.....	280.60	72.90	353.50
Totals.....	1,588.45	8,255.47	9,843.92
Total commissary sales to all vessels:			
October, 1921.....	\$31,637.37	\$18,583.78	\$50,221.15
September, 1921.....	27,539.87	19,196.67	46,736.54
October, 1920.....	132,225.58	44,334.89	176,560.27

	Cristobal.	Balboa.	Total.
Admeasurement certificates:			
United States equivalent issued or made.....	41	2	43
Measured for Panama Canal net tonnage.....	23	11	34
United States equivalent or Panama Canal net tonnage corrected.....	34	17	51
Services of harbor equipment:			
Tugs, total operating hours.....	470	542	1,012
Launches, total operating hours.....	1,218	1,216	2,434
Vessels repaired at Panama Canal shops:			
Commercial.....	40	10	50
United States Government.....	3	6	9
Canal equipment.....	14	23	37
Vessels dry-docked:			
Commercial.....	3	3	6
United States Government.....		3	3
Canal equipment.....	6	11	17
Clearances issued.....	164	139	303
Bills of health issued.....	160	140	300

MOVEMENT OF PASSENGERS.

The number of passengers arriving at Canal Zone ports during the month of October, 1921, exceeded the number embarking for the first time in several months. From April 1, 1921, to September 30, 1921, the number of passengers embarking exceeded the number arriving by 4,492. For October, 1921, the number of arrivals exceeded the number of departures by 355, as shown in the following tabulation:

	At Cristobal.			At Balboa.		
	First class.	Other than first class.	Total.	First class.	Other than first class.	Total.
Disembarking:						
From Atlantic ports.....	1,251	725	1,976	0	.....	9
From Pacific ports.....	134	63	197	218	95	313
Total disembarking.....	1,385	788	2,173	227	95	322
Embarking:						
For Atlantic ports.....	880	749	1,629	.....	.....	.....
For Pacific ports.....	240	102	342	75	94	169
Total embarking.....	1,120	851	1,971	75	94	169
Remaining on board vessels:						
From Atlantic to Pacific ports.....	566	583	1,149	686	654	1,340
From Pacific to Atlantic ports.....	400	267	667	540	324	864
From Atlantic to Atlantic ports.....	234	251	485	.....	.....	.....
From Pacific to Pacific ports.....	.....	.....	.....	18	293	311
Total remaining on board.....	1,200	1,101	2,301	1,244	1,271	2,515
Total passengers arriving.....	2,585	1,889	4,474	1,471	1,366	2,837
Total passengers departing.....	2,320	1,952	4,272	1,319	1,365	2,684

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks and the consumption of water for lockages, for the month of October, 1921, as compared with that of the preceding month, and of the corresponding month of last year.

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	119	127	246	8	9	17	263
Pedro Miguel.....	120	129	249	16	21	37	286
Miraflores.....	120	129	249	18	22	40	289
Total lockages, October, 1921.....	359	385	744	42	52	94	838
Total lockages, September, 1921.....	274	371	645	37	33	70	715
Total lockages, October, 1920.....	343	350	693	.....	.....	82	775

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	129	138	267	20	20	40	307
Pedro Miguel.....	124	131	255	46	41	87	342
Miraflores.....	124	131	255	47	42	89	344
Total vessels, October, 1921.....	377	400	777	113	103	216	993
Total vessels, September, 1921.....	276	384	660	89	100	189	849
Total vessels, October, 1920.....	363	374	737			174	911

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	21	26	27
Canal equipment.....	19	61	62
Total noncommercial vessels.....	40	87	89

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	1,022,730,000	971,310,000	898,650,000
Leakage.....	20,000,000	18,300,000	67,000,000
Maintenance.....			2,830,000
Total consumption, October, 1921.....	1,042,730,000	989,610,000	967,480,000
Total consumption, September, 1921.....	878,920,000	840,290,000	815,560,000
Total consumption, October, 1920.....	1,099,600,000	913,550,000	861,330,000

METEOROLOGY AND HYDROGRAPHY.

The rainfall for the month was generally above normal over the Pacific coast, approximately normal over the Chagres River valley, and below normal over Gatun Lake and the Atlantic coast, Porto Bello reporting the lowest October rainfall of 9 years' record, and Colon the lowest with one exception since 1904. The West Indian hurricane that swept over the Caribbean during the middle of the month was largely responsible for the existing weather conditions, strong southerly winds resulting from the nearness of this area of low barometer; this in turn caused excess of rainfall to the south of the Continental Divide and general deficiency on the northern or Atlantic slope. Rainfall totals ranged from 4.84 inches at Porto Bello to 21.74 inches at the Chilibrillo station. The greatest amount of rainfall recorded on any one day was 3.66 inches at Alhajuela on the 12th. The estimated rainfall over the Gatun Lake watershed area was 12.63 inches, compared with an 11-year mean of 15.85 inches; while over the Chagres River watershed above Alhajuela it was 14.73 inches, compared with a 20-year mean of 15.15 inches.

The discharge of the Chagres River at Alhajuela was 3,252 c. f. s., being 6 per cent below the 20-year mean of 3,452 c. f. s. The maximum discharge for the month of October of record was 5,135 c. f. s. in 1914, while the minimum October discharge of record was 2,031 c. f. s. in 1904. The maximum momentary discharge for the month was 18,600 c. f. s. at elevation 99.85 feet on the 19th.

The Gatun Lake watershed total yield for the month of October, 1921, was 10,517 c. f. s., being 12 per cent below the 11-year October mean of 11,991 c. f. s. The maximum total yield of record for October was 16,291 c. f. s. in 1920, and the minimum total yield was 7,868 c. f. s. in 1911. The net yield was 10,017 c. f. s., which is 13 per cent below the average October net yield of 11,484 c. f. s. The lake varied in elevation from 85.49 feet on the 1st to 86.80 feet on the 29th.

The draft on the lake for lockages and power was 2,261 c. f. s., compared with 2,182 c. f. s. for last month, and 2,305 c. f. s. for October, 1920. The ratio of water expended for power and lockages was 2 to 1. A total of 379 spillway gate-hours were necessary to control the lake during the month.

Gamboa pump station and Brazos Brook reservoir drew 37.9 and 54.6 million cubic feet, respectively, from the lake.

Miraflores Lake varied in elevation from 53.20 feet on the 14th to 54.90 feet on the 13th. Elevation 54.90 feet is the highest stage Miraflores Lake has reached since the opening of the Canal and was due to the inadvisability of operating the spillway and thereby causing troublesome currents during a period of unusually heavy traffic.

Temperature records for the month of October are given below:

	Maximum.	Minimum.	Monthly mean.
Balboa Heights.....	89	70	79
Gamboa.....	92	68	79
Alhajuela.....	91	66	78
Gatun.....	91	72	81
Colon.....	92	73	81

The following gives a comparison of the monthly rainfall by sections for October, 1921, and October, 1920:

Section.	Rainfall.		Rainy days.	
	1921.	1920.	1921.	1920.
	<i>Inches.</i>	<i>Inches.</i>		
Pacific.....	12.98	9.97	21	25
Central.....	13.10	20.85	22	28
Atlantic.....	7.92	19.12	20	28

Five seismic tremors were recorded by the Balboa Heights seismographs during the month. All were comparatively small tremors with the exception of the disturbance on the morning of the 17th, which was generally felt through the Zone. The epicenter of this disturbance was of near-by origin, the seismogram indicating a distance of 70 miles. Recent information from near Pacora would seem to indicate that the disturbance was more violent in that neighborhood.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., is shown in comparative form, in the following tabulation:

	October, 1921.	September, 1921.	October, 1920.
Gross output, KWH:			
Gatun hydroelectric station.....	5,304,100	5,198,300	6,039,100
Miraflores steam plant.....	1,190	1,970	233,640
Combined gross output.....	5,305,290	5,200,270	6,272,740
Water consumption..... cubic feet.	4,062,727,820	3,970,751,857	4,268,130,000
Oil consumption..... barrels.	1,953	1,953	3,360
Power distributed to consumers..... KWH.	4,448,013	4,396,098	5,331,293
Loss of power in plant auxiliaries, transmission and transformation.....	857,277	804,172	941,447
Per cent of loss of power to gross output.....	16.15	15.50	15.00

New construction work covering (a) the installation of one 3-phase 44,000-6,600 volt, KVA transformer and new tie-line equipment at the Gatun substation, and (b) the installation of 2 complete feeder equipments at the Balboa substation were 95 per cent complete at the close of the month.

Miscellaneous electrical repairs and installations of electrical equipment were made on 17 vessels at Cristobal and 27 vessels at Balboa during the month. There were 365 work orders issued for work to be performed by the Electrical Division during the month of October, as compared with 374 for September.

SHOP, FOUNDRY, AND DRY-DOCK WORK.

The output of the Mechanical Division in patterns and castings for October, 1921, as compared with the preceding month, was as follows:

	October, 1921.			September, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	4	227	12,943	14	248	10,407
Steel.....		95	8,258	2	26	6,720
Brass.....	10	126	6,423	4	152	5,275

At the Balboa shops, miscellaneous repairs were made on 39 vessels, the more important of which were as follows:

Work on the reboiling and overhaul of the steamship *Panama* was brought very nearly to completion during the month. This work will be completed during November and will meet the contract date of completion and come well within the allotment of funds.

The nonmagnetic survey vessel *Carnegie* was docked, a new rudder stock fashioned and installed, and a new section of the outer stern shaft for her feathering propeller was made. The steamship *Republic* was docked and a new propeller fitted. The crank shaft was raised on the steamship *Argyll*, bearings remetaled and crank coupling bolts renewed. Boiler repairs were carried out on the steamship *Katrina Luckenbach*.

Routine docking and overhaul of submarines O-11, O-13, and O-14 was completed during the month, and docking and overhaul of the Dredging Division fleet was carried forward.

At the Cristobal shops, miscellaneous repairs were made on 57 vessels, the more important of which were as follows:

The hull of the dredge *Marmot* and the bottoms of barges Nos. 122 and 123 were cleaned, scaled, and painted. The anchor windlass on the steamship *Cristobal* was repaired, boiler scaled, and internal feed flanges in the starboard boilers were installed. The copper was removed from the bottom of the launch *Gloriana*, the hull calked, and the copper sheathing reinstalled; the deadwood, shaft log, and keel were repaired.

There were 26 vessels dry-docked during the month, 17 at Balboa and 9 at Cristobal.

Definite word was received during the month that for the present at least repairs would not be carried out on the steamship *Colon*. In adjusting the force it had been counted that the steamship *Colon* would immediately follow the steamship *Panama* for an overhaul similar to that undertaken on the latter vessel.

The prospects for work at present are such that without the steamship *Colon* a very large reduction is necessitated at the Balboa shops, and the scarcity of work at the Atlantic side has brought about a large reduction in force at the Mount Hope shops. In anticipation of the departure of the steamship *Panama*, reductions aggregating about 20 per cent of the force at the Balboa shops were made during the month of October.

Four hundred and fourteen job orders were completed during the month with 213 remaining uncompleted at the end of the month.

DREDGING DIVISION.

Cucaracha slide showed no general movement, but a slight surface movement has continued near the top and south end of this slide. No additional material has reached the Canal prism except the silt which came from this slide and settled west of the Canal axis opposite the slide area.

A slight movement occurred on the west side of the Canal opposite Division Office slide on the 14th of the month, causing about 7,000 cubic yards of rock to come into the Canal prism. On the 17th of the month Powder House slide again became active, causing about 12,500 cubic yards of material to come into the Canal prism.

No inconvenience to Canal traffic was caused by any of the above movements. The total excavation for October, including earth and rock, was 380,200 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations	Equipment.
	Earth.	Rock.			
45,400	9,100	36,300	Maintenance.....	Gaillard Cut, East Culebra Slide 1746-00 to 1767-00 E.....	Gamboa.
7,000	500	6,500	Maintenance.....	Gaillard Cut, Division Office Slide. 1697-50 to 1695-50 W.....	Gamboa.
12,500	1,200	11,300	Maintenance.....	Gaillard Cut, Powder House Slide. 1634-00 to 1636-50 E.....	Gamboa.
42,100	2,100	40,000	Maintenance.....	Gaillard Cut, Cucaracha Slide. 1809-00 to 1812-00 E.....	Gamboa.
7,000		7,000	Original.....	Pacific entrance. 2267-10 to 2274-00 W.....	Cascadas.
5,200	5,200		Maintenance.....	2267-10 to 2274-00 W.....	Cascadas.

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment.
	Earth	Rock.			
9,900	9,900		Maintenance	2180-00 to 2219-00 E.	Cascadas.
18,000		18,000	Original	2180-00 to 2219-00 E.	Cascadas.
11,000	11,000		Maintenance	2121-50 to 2129-50 W.	No. 86.
10,000	10,000		Original	2188-50 to 2223-20 E.	No. 86.
107,000	107,000		Maintenance	2188-50 to 2223-20 E.	No. 86.
27,800	27,800		Maintenance	2179-50 to 2191-00 W.	No. 84.
77,300	77,300		Maintenance	2098-00 to 2119-00 W.	No. 84.
380,200	261,100	119,100			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa	107,000
Dumped on San Juan fill	144,800
Dumped on flats west of Canal	88,300
Dumped at sea, Pacific entrance	40,100
Total	380,200

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations, and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form.

	October, 1921.	September, 1921.	October, 1920.
	Gallons.	Gallons.	Gallons.
Pumping stations	698,577,500	708,203,000	818,193,700
Filtration plants	419,324,000	426,862,000	515,581,000
Water consumed by Panama City	94,136,000	91,415,000	83,808,000
Water consumed by Colon	51,470,000	52,807,000	66,037,000
Sales of water to vessels	10,181,372	9,992,132	12,627,357

Construction work, as itemized below, was under progress during the month, with completion on September 30 and October 31 as shown:

	Per cent completed.	
	Sept. 30.	Oct. 31.
Construction of new concrete sea wall, Santo Tomas Hospital	53	95
Extension of roads, Santo Tomas Hospital	6	8
Concrete roof, low service reservoir	98	100
Grading of Silver City, Mount Hope	75	85
Storm sewer, Diablo Road, at lumber shed	60	86
Foundation for statue of Balboa	79	79
Extension of sewers, new Santo Tomas Hospital	35	36
Raising track at Pier No. 6, Cristobal		60
Extension of sea wall, new Santo Tomas Hospital		10

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, on October 31, were as follows:

	Men.	Women.	Children.	Total occupants.		
				October, 1921.	September, 1921.	October, 1920.
Americans	2,693	2,051	2,276	7,020	7,056	8,240
Europeans	132	39	90	261	258	209
West Indians	4,923	2,537	5,405	12,865	12,998	10,896
Totals, October, 1921	7,748	4,627	7,771	20,146		
Totals, September, 1921	7,962	4,668	7,682		20,312	
Totals, October, 1920	8,472	4,142	6,731			19,345

WORKING FORCE—NUMBER OF EMPLOYEES.

The number of employees as of October 19, 1921, was 11,828, as compared with 19,039 on October 20, 1920, making the number of employees of The Panama Canal and the Panama Railroad Company approximately 62 per cent of the number a year ago.

The following tabulation shows the number of gold and silver employees as of October 19, 1921, by departments, together with a comparison of the working force for the preceding month, and that of October, 1920.

	Employees as of October 19, 1921.		Total employees.		
	Gold.	Silver.	October, 1921.	September, 1921.	October, 1920.
Operation and Maintenance:					
Office.....	29	33	62	60	69
Electrical.....	162	154	316	324	474
Municipal Engineering.....	84	592	676	762	1,122
Lock Operation.....	165	553	718	726	715
Dredging.....	155	721	876	898	1,337
Mechanical.....	571	805	1,376	1,565	3,007
Marine.....	170	383	553	581	710
Fortifications.....	40	273	313	304	563
Totals.....	1,376	3,514	4,890	5,220	7,997
Supply Department:					
Quartermaster.....	180	1,162	1,342	1,345	2,641
Subsistence.....	23	239	262	265	410
Commissary.....	187	1,008	1,195	1,266	1,755
Cattle Industry—Plantations.....	16	165	181	145	410
Hotel Washington.....	8	81	89	99	101
Totals.....	414	2,655	3,069	3,120	5,317
Accounting Department.....	197	7	204	210	262
Health Department.....	235	745	980	1,003	1,073
Executive.....	538	249	787	745	826
Totals.....	970	1,001	1,971	1,958	2,161
Panama Railroad:					
Superintendent.....	62	209	271	305	576
Transportation.....	81	107	188	197	281
Receiving and Forwarding Agency.....	66	847	913	1,063	1,844
Coaling stations.....	92	434	526	512	863
Totals.....	301	1,597	1,898	2,077	3,564
Grand totals, October, 1921.....	3,061	8,767	11,828		
Grand totals, September, 1921.....	3,127	9,248		12,375	
Grand totals, October, 1920.....	4,217	14,822			19,039

* Includes employees of former Building Division.

SCHOOLS.

The public schools of the Canal were opened on October 4, 1921, with an attendance on the opening day of 2,671. The average daily attendance for the month was 2,834.1, which is the highest in the history of the Canal Zone schools. There was a decrease from last year in the number of white children enrolled, but the colored schools showed an average increase in attendance of more than 200 over last year.

Owing to the status of the school allotment, needed repairs and alterations to buildings can not be made; free transportation to school children has been discontinued, and janitor service has been considerably reduced.

The following brief summary shows the enrollment, average attendance, etc., in both the white and colored schools;

	White.	Colored.	Total.
Gross enrollment.....	1,692	1,453	3,145
Net enrollment.....	1,680	1,441	3,121
Average daily attendance.....	1,556.3	1,277.8	2,834.1
Pupils not tardy nor absent.....	1,077	832	1,909
Number of cases of tardiness.....	249		249
Number of teachers.....	79	32	111

VITAL STATISTICS.

A total of 168 deaths occurred during the month of October, 1921, among the population of the Canal Zone and the cities of Panama and Colon, which is equivalent to an annual death rate of 16.24 per thousand. The 3 leading causes of death were (a) tuberculosis, (b) pneumonia, and (c) diarrhea and enteritis; these 3 causes were responsible for 47 per cent of all deaths from disease. Among other causes of death listed were 3 from typhoid fever, 2 from malarial fever, and 1 each from diphtheria and measles. Of the total deaths, 72, or 43 per cent, occurred among children under 5 years of age. There were 10 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 364 live births reported during the month, and 19 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 37.01 per thousand population. Deaths among children under 1 year of age numbered 48, giving an infant mortality rate, based on the number of births reported for October, of 131.87 per thousand live births.

Eighty-six cases of malaria were reported during the month, of which 12 were employees and 74 nonemployees; of the nonemployees, 53 were soldiers. These malarial cases originated as follows: in Panama City, 4; in the Canal Zone, 50; and outside of the Canal Zone, 32.

Among other diseases reported during the month were 4 cases of typhoid fever, 4 of dysentery, 3 of smallpox, 1 of leprosy, 4 of scarlet fever, and 17 of diphtheria.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses and cash sales from stock, are shown below in comparative form:

	October, 1921.	September, 1921.	October, 1920.
Materials received on United States requisitions during the month, chargeable as follows:			
Operation and maintenance.....	\$98,337.89	\$67,004.52	\$715,261.01
Construction and equipment.....			4,615.78
Miscellaneous.....	10,602.48	13,819.02	11,763.94
Totals.....	108,940.37	80,823.54	731,640.73
Cash sales on the Isthmus:			
Stock.....	21,942.32	27,105.54	40,001.16
Fuel oil (including sales to ships).....	669.17	108.88	72,785.25
Scrap.....	1,275.21	400.01	787.01
Obsolete and second-hand material.....	4,439.78	828.31	9,611.62
Totals.....	28,326.48	28,442.74	123,185.04
Sales to steamships from storehouses:			
Miscellaneous stock items.....	4,579.39	11,004.36	19,598.52
Fuel oil.....	21.67	108.88	43,816.80
Totals.....	4,601.06	11,113.24	63,415.30

Respectfully,

JAY J. MORROW,

Governor.

Heavy Commercial Traffic for One Day.

Eighteen merchant vessels, the British cruiser *Raleigh*, and a launch made the transit of the Canal on November 23, establishing what is thought to be a new high record for a day's commercial traffic. The cargo carried through aggregated 78,648 tons and the total of the tolls levied was \$79,808.50.

Omitting the launch, which paid \$2.25 in tolls, but is not an ocean-going vessel, the traffic from Atlantic to Pacific was 10 vessels, of 38,221 net tons, Panama Canal measurement, plus the 12,011 displacement tons of the cruiser, carrying 25,776 tons of cargo and paying \$44,722.75 in tolls. The movement from Pacific to Atlantic was 9 vessels, of 37,710 net tons, carrying 52,872 tons of cargo and paying \$35,081.25 in tolls.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, October, 1921.*

From—	NORTH AMERICA.										EUROPE.										Grand total.	Per cent of total cargo.			
	UNITED STATES.					NORTH AMERICA.					EUROPE.														
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	Mexico.	East coast of Canada.	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Portugal.	Sweden.	Europe. ²	Total, Europe.			East coast of South America.	Africa.	
SOUTH AMERICA:																									
Chile	18,405			18,405	2,000	2,036			20,405	25,347	583		5,522	3,325	695					6,029	41,501	9,500	71,406	11.7	
Colombia	732			732					2,768												30		2,798	0.4	
Ecuador	2,119			2,119		1,553			3,672														3,672	0.6	
Peru	2,919			2,919		3,251			6,170	11,197				47						287	11,531		17,701	2.9	
West coast of South America ¹	4,500			4,500		5,749			10,249	458				2,672	2,672					8,983	14,785		25,034	4.1	
Total, South America	28,675			28,675	2,000	12,589			43,264	37,002	583		5,522	6,044	3,367					15,299	67,817	30	9,500	120,611	19.7
NORTH AMERICA:																									
West coast of United States.	98,203	2,096	2,032	102,331	2,306	664	5,154		110,455	129,885	2,323	7,523	3,590	12,336	3,713	6,587	7,656	72	88,378	262,083			372,518	60.9	
West coast of Canada	6,939			6,939					7,196	4,397	75	478	2,990							7,462			14,658	2.4	
West coast of Central America.					8	1,458			1,466											478			1,944	0.3	
Total, North America	105,162	2,096	2,269	109,527	2,314	2,122	5,154		119,117	134,282	2,398	8,001	6,580	12,336	3,713	6,587	7,656	72	88,378	270,003			389,120	63.6	
ASIA:																									
China	13,114			13,114	508				123	13,745	1,505	2,514								4,019			17,764	3.0	
Japan	814			814					814			6								6			820	0.1	
Philippines	12,644			12,644					12,644														12,644	2.0	
Far East	2,050			2,050	251				2,301			9,980											2,301	0.4	
Malay Peninsula	1,058			1,058					1,058	10,806										20,786			21,844	3.6	
Total, Asia	29,680			29,680	759				123	30,562	12,311	12,500								24,811			55,373	9.1	
AFRICALASIA:																									
Australia	3,300			3,300					3,300	19,248				14,057						19,248			3,300	0.6	
New Zealand																							19,248	3.1	
Australasia ²																				14,057			14,057	2.3	
Total, Australasia	3,300			3,300					3,300	19,248				14,057						33,305			36,605	6.9	
HAWAII:																									
Hawaii	9,629			9,629					9,629														9,629	1.6	
Grand totals	176,446	2,096	2,269	180,811	5,073	14,711	5,154		123	205,872	202,843	2,981	20,501	12,102	32,437	7,080	6,587	7,656	72	103,677	395,836	30	9,500	611,338	100.0
Per cent of total cargo, Oc- tober, 1921.	28.9	0.3	0.4	29.6	0.8	2.4	0.8	0.1	33.7	33.2	0.5	3.4	2.0	5.3	1.1	1.0	1.2		17.0	64.7		1.6	100.0		
Per cent of total cargo, September, 1921.	29.8	1.6	0.7	32.1	1.1	2.6			35.8	37.3	3.8	1.3	1.5	1.8	0.7	1.1			14.1	64.1		0.1			
Per cent of total cargo, Oc- tober, 1920.	21.4	12.5	4.5	38.4	1.4	4.6			45.6	36.2		0.5	3.1	2.6	2.0	1.1				51.6					

* General cargo not routed so as to allow segregation between definite ports.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, October, 1921.*

From—	SOUTH AMERICA.				NORTH AMERICA.				ASIA.				AUSTRALASIA.				Grand totals.	Per cent of total cargo						
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. ²	Total, South America.	West coast of United States.	West coast of Canada.	West coast of Central America.	Total, North America.	China.	Japan.	Philippines.	Far East. ²	Malay Peninsula.	Total, Asia.			Australia.	New Zealand.	Australasia. ¹	Total, Australasia. ¹	Hawaii.	
UNITED STATES:																								
North Atlantic ports	2,292	416	802	1,691	4,307	9,508	76,381	302	700	77,383	27,303	38,137	1,529	7,753	710	75,432			4,830	7,023	11,853	476	174,652	46.7
South Atlantic ports							1,100			1,100	2,459	11,352				13,811			100	410	510		15,421	4.1
Gulf ports	832					832	12,301			12,301	3,885	30,396				34,281		5,400			5,400		52,814	14.1
Total, United States	3,124	416	802	1,691	4,307	10,340	89,782	302	700	90,784	33,647	79,885	1,529	7,753	710	123,524		5,400	4,930	7,433	17,763	476	242,887	64.9
East coast of Mexico	14,000					14,000	3,000	15,000	4,860	22,860		8,949				8,949							45,809	12.2
Atlantic terminus, Cristobal, C. Z.	462	646	64	309	1,603	3,084	731		2,795	3,526								45	2,233	1,120	3,398		6,610	1.7
East coast of Canada																							3,398	0.9
Total, North America	17,586	1,062	866	2,000	5,910	27,424	93,513	15,302	8,355	117,170	33,647	88,834	1,529	7,753	710	132,473		5,445	7,163	8,553	21,161	476	298,704	79.7
EUROPE:																								
Belgium	231			783		1,014	9,081	516		9,597													10,611	2.9
British Isles	2,322			3,415	2,013	7,750	5,910	434		6,344								4,818	29,908	280	35,006		49,100	13.2
Denmark	888			700		1,588																	1,588	0.4
France	31			60	73	164	39		88	127										300			591	0.1
Germany	1,278			45	836	2,159	513			513													2,672	0.7
Holland	183					183																	183	0.1
Sweden				400		400	606			606													1,006	0.3
Europe ¹					249	249	4,420			4,420													4,669	1.2
Total Europe	4,933		105	5,371	3,098	13,507	20,569	950	88	21,607								4,818	29,908	580	35,306		70,420	18.9
East coast of South America		33				33	5,020	95		5,115		165					165						5,313	1.4
Grand totals	22,519	1,095	971	7,371	9,008	40,964	119,102	16,347	8,443	143,892	33,647	88,999	1,529	7,753	710	132,638		10,263	37,071	9,133	56,467	476	374,437	100.0
Per cent of total cargo, October, 1921	6.1	0.3	0.2	1.9	2.4	10.9	31.8	4.4	2.2	38.4	9.0	23.8	0.4	2.1	0.2	35.5		2.7	9.9	2.5	15.1	0.1	100.0	.....
Per cent of total cargo, September, 1921	4.0	0.4	0.1	1.3	4.8	10.6	28.8	1.9	1.2	35.9	7.0	19.9	1.5	10.1	.....	38.5		1.8	1.7	10.7	14.2	0.8	.....	.....
Per cent of total cargo, October, 1920	31.6	1.1	0.5	3.0	2.6	38.8	12.2	0.7	0.3	15.4	10.0	3.2	0.5	12.0	.....	25.7		9.1	8.5	2.5	20.1	.....	.....	.....

* Figures represent tons of 2,240 pounds.

² General cargo not routed so as to allow segregation between definite ports.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, November 26, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.	
Acuña	11	16 39	20	6	10	20	13 33	20	16 58	British	Pacific Steam Navigation Co.	215.0	33.0	14.4	Cristobal.	Champerico.	General	471	1,273	706
Manay	15	16 27	20	6	10	20	13 35	20	16 58	British	Pacific Steam Navigation Co.	216.0	35.1	11.7	Cristobal.	Guayaquil.	General	226	1,357	884
South American	19	17 05	20	7	10	20	14 30	20	16 12	British	South American Steamship Co.	251.0	43.6	20.4	New York.	Valparaiso.	Gen., coke, coal	2,690	2,444	1,593
Middleham	19	16 40	20	10	45	20	17 17	20	18 20	British	Lancashire Shipping Co.	380.0	50.0	14.0	Galveston.	Callao.	Ballast.		5,028	3,798
Castle	20	15 35	21	6	23	21	14 07			American	United States Navy	308.0	44.5	17.6	New York.	Bahoa.	General.	5,705	7,539	5,495
Galveston	19	3 25	21	7 08	21	15 05	21	16 30		American	United States Steel Products Co.	424.2	56.0	25.6	New York.	San Diego.	General.			
Steel Worker.	18	3 25	21	7 08	21	15 05	21	16 30		American	United States Army				Cristobal.	Gatun.				
Commodore				9 00																
Pedro Christensen	21	23 38	22	6 45	22	13 36	22	19 34	Swedish	Johnson Steamship Line	362.0	51.3	15.3	Helsingfors.	San Francisco	Paper, pulp, gen.	1,753	5,281	4,013	
Yates Maru.	22	9 45	22	10 15	22	18 05	23	15 00	Japanese.	Teikoku Kisen Co.	425.0	53.0	16.0	Cardiff.	Astoria	Ballast.		7,164	5,430	
Takatsuyo Maru	22	9 45	22	10 15	22	18 05	23	15 00	Japanese.	Nippon Yusen Kaisha	440.0	58.0	24.8	New York.	Mol.	General, cotton.	6,839	7,596	5,456	
Yolande	18	24 00	22	11 43	22	19 41	22	21 16	American	Olson Steamship Co.	225.0	43.0	15.0	Havre.	San Francisco	Ballast.		1,694	928	
Willard	22	14 31	23	6 30	23	14 25	23	15 55	American	Williams Steamship Co.	381.0	52.0	23.7	New York.	Los Angeles	General	5,232	5,680	4,162	
Palena	18	15 05	23	7 20	23	16 02	23	17 07	Chilean.	South American Steamship Co.	350.0	41.2	22.8	Cristobal.	Valparaiso.	General	626	3,666	2,577	
Anna	22	13 00	23	7 37	23	16 06	23	17 37	Norwegian.	P. Johansen	265.0	37.0	12.0	Cardifena.	Buenaventura.	General	50	1,851	1,179	
Santa Jean	22	7 24	23	8 09	23	16 31	23	17 35	French	French Steamship Line	397.0	50.0	18.0	Havre.	Talcahuano.	General	215	5,849	4,081	
Santa Teresa	22	15 46	23	8 52	23	17 35	23	19 25	American	W. R. Grace & Co.	360.2	51.6	22.6	New York.	Talcahuano.	General	2,304	5,726	4,086	
Kaikoura	22	23 17	23	9 09	23	18 51	24	14 30	British.	New Zealand Shipping Co.	460.0	58.0	25.4	London.	Auckland.	General	5,038	9,057	6,438	
Liberator	23	6 20	23	10 23	23	18 24	23	20 03	American	Atl. Gulf. & Pac. Co. (S. B.)	140.0	56.0	23.8	Baltimore.	Seattle.	General	6,400	8,199	6,250	
Raleigh	23	5 58	23	10 23	23	18 24	23	20 03	British	British Navy	605.0	65.0	20.8	Kinston.	Vancouver.	Ballast.		5,926	4,398	
Sweden Maru.	23	2 40	23	11 45	23	20 50	26	14 00	Japanese.	B. Støyt Nielsen	385.0	51.0	14.0	Barry.	Portland.	Coal	5,011	6,617	5,050	
Louise Nielsen.	23	17 15	23	11 55	23	21 36	23	22 45	Norwegian.	Cayzer Irvine & Co.	409.0	54.0	23.2	Cardiff.	San Francisco	General	308	1,484	916	
Chihuahua	23	21 00	24	6 25	24	14 00	24	15 14	British	United American Line.	235.0	35.0	16.3	St. Thomas.	Salina Cruz.	General	2,697	7,150	4,913	
Minnesota	24	8 20	24	9 52	24	15 20	24	16 30	American	Reginald Morch Turnbull	407.0	53.7	20.2	Boston.	Los Angeles.	General	2,502	4,064	3,037	
Southgate.	24	10 27	24	10 50	24	18 05	24	19 18	British	Hain Steamship Co.	351.5	43.2	21.0	Port Talbot.	Valparaiso.	Coal	8,402	8,946	6,145	
Temore.	24	11 30	24	11 45	24	19 27	24	21 40	British	Pacific Steam Navigation Co.	475.6	60.0	26.0	Cardiff.	Auckland.	Coal	272	4,768	2,956	
Quilona	24	11 30	24	11 45	24	19 27	24	21 40	British	Pacific Steam Navigation Co.	362.0	46.0	18.6	New York.	Guayaquil.	General	362	4,768	2,956	
Bay State.	25	7 10	25	6 15	25	13 35	25	15 50	American	Pacific Steamship Co. (S. B.)	516.5	72.2	25.6	Philadelphia.	Seattle.	Ballast.	15,299	10,532	7,958	
Royal City.	25	12 50	25	9 05	25	16 21	25	17 35	British.	St. Just Steamship Co.	419.7	53.8	26.6	Port Arthur.	Yokohama.	Case oil	6,500	6,358	4,861	
Lyons Maru.	25	7 20	25	11 25	25	19 00	25	20 01	Japanese.	Nippon Yusen Kaishiki Kaisha	445.0	58.0	25.1	New York.	Yokohama.	Cotton, steel, etc.	8,212	7,720	5,497	
Mary Ellen.	25	7 20	25	11 25	25	19 00	25	20 01	American.	William F. Collins	26.7	7.7	3.5	Gatun Lake.	Bahoa.	Ballast.			3	
Walter A.				23		23	19 00													
Luckenbach.	25	21 23	26	6 14	26	14 10	26	15 30	American.	Luckenbach Line	446.5	56.1	19.6	New York.	San Diego.	General.	2,154	8,785	6,562	
Bahoa	23	17 52	26	7 45	26	14 54	26	15 50	American.	Colombian Maritime Co.	190.0	29.1	11.2	Cristobal.	Buenaventura.	Ballast.		741	350	
Rio Gatun.	24					8 17			Panaman.	A. R. Eckhardt	31.4	8.0	7.0	Cristobal.	Gatun Lake.			10	8	

* Launch.

* Cruiser.

Predicted Lumber Shipments.

The *West Coast Lumberman* for November 15, 1921, commenting on the proposed reduction of the transcontinental freight rate on lumber predicts that shipments by water will continue to increase. According to an announcement of the West Coast Lumbermen's Association the steamship lines, which prior to the increase of railroad freight rates a little more than 1 year ago handled less than 1,500,000 feet of lumber through the Panama Canal in 6 months' time, will wind up the current year with intercoastal deliveries amounting to over 175,000,000 feet, and by spring indications are that these steamship lines will have to add sufficient tonnage to take care of 50,000,000 feet a month from the Oregon and Washington mills to north Atlantic markets. When shipments by water were started on a large scale the trade was handicapped by lack of handling facilities on the Atlantic coast, but during the past year terminal improvements have been made in Baltimore, New York, and Boston, and other projects are now under way, which will render material aid to the Pacific northwest lumber industry in permanently establishing its products in Atlantic coast markets.

A tabulated comparison of the proposed reduced railroad freight rates with the present ocean freight rates on various grades of lumber shows that the latter are lower by \$4 to \$12 per thousand feet.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending November 26, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Acajutla.....	Pacific Steam Navigation Co.....		November 20.		472
Manavi.....	Pacific Steam Navigation Co.....		November 20.		226
Atenas.....	United Fruit Co.....	November 20.	November 20.	(¹)	28
Oranian.....	Leyland Line.....		November 22.		300
Granfos.....	Caribbean Steamship Line.....	November 20.	November 22.	1	(³)
Allianca.....	Panama Railroad Steamship Line.....	November 20.	November 26.	1,130	1,008
Ebro.....	Pacific Steam Navigation Co.....	November 21.	November 22.	(¹)	149
Zacapa.....	United Fruit Co.....	November 21.	November 24.	998	225
Anna.....	Caribbean Steamship Line.....	November 22.	November 23.	290	(³)
Saint Jean.....	French Line.....	November 22.	November 23.	21	(³)
Quilpue.....	Pacific Steam Navigation Co.....	November 22.	November 23.	247	(³)
Palena.....	Chilean Line.....		November 23.		619
Pastores.....	United Fruit Co.....	November 22.	November 23.	123	154
Cristobal.....	Panama Railroad Steamship Line.....	November 22.		9,681	
San Blas.....	United Fruit Co.....	November 22.	November 24.	12	497
Caribbean.....	Panama Railroad Steamship Line.....	November 22.	November 26.	720	28
Atenas.....	United Fruit Co.....	November 23.	November 23.	(¹)	179
Balboa.....	Colombian Maritime Co.....	November 23.	November 26.	610	(³)
Quillota.....	Pacific Steam Navigation Co.....	November 24.	November 25.	111	34
Cardiganshire.....	Pacific Steam Navigation Co.....	November 24.	November 25.	(¹)	32
Crubamba.....	Peruvian Line.....	November 24.		2,418	
Puerto Rico.....	French Line.....	November 24.	November 26.	16	253
Coronado.....	Elders & Fyffes, Ltd.....	November 26.	November 26.	22½	½
Barima.....	Pacific Steam Navigation Co.....	November 26.		66	

¹ No cargo discharged.² Pounds.³ No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending November 26, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Quilpue.....	Pacific Steam Navigation Co.....	November 21.	November 22.	3	
Pedro Christopherson.....	Johnston Line.....	November 21.	November 22.	55	
Quillota.....	Pacific Steam Navigation Co.....	November 24.	November 25.	73	7
Barima.....	Pacific Steam Navigation Co.....	November 26.	November 26.	1	

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the week ended November 26:

Motor ship *Chiralite*, calk and pitch deck; repair deck below and around funnel; install galley range; manufacture and install smoke pipe from range to funnel; dredge *Cascadas*, crane service to remove broken saddle block and install good order block; repair stern spud; repair saddle block; launches *No. 405*, remove present engine bed and install new bed suitable for speedway engine; install new shaft log and piece out keel to take tube and shaft, 2" in diameter; manufacture and install stern castings, bronze; manufacture new rudder and install new rudderpost to suit new location of propeller, patch all copper in connection with repairs; *Aspinwall*, renew after end of keel, repair sternpost; replace all stern castings; repair copper in wake of repairs.

PREVIOUSLY REPORTED.

Steamship *Panama*, reboiling and general repairs to machinery and hull; barges *No. 1*, dock, scale, and paint; light repairs; *No. 148*, dock, scale, and paint; light repairs; compressor barge *No. 27*, dock, scale, and paint; light repairs; launch *Pacific*, general repairs to hull; crane boat *La Valley*, heavy hull repairs; barges *No. 136*, dock, scale and paint bottom; heavy hull and strongback repairs; *No. 133*, dock, scale, and paint bottom; heavy hull and strongback repairs.

The following vessels were at the Cristobal shops for repairs during the week ended November 28:

Schooner *C. D. Bryant*, dry-dock for inspection; steamships *Cristobal*, renew section of galley pipe; supply brass for plungers in feed pump, etc; *Puerto Rico*, repair beam pump; *Caribbean*, repair brake hand screw on windlass; repair fire line; renew 2 staybolt nuts and washers in forward boilers, etc; *Balboa*, repair steering gear; tug *Porto Bello*, remove flywheel of dynamo; true up keys and eccentric sheave; barges *Nos. 15 and 18*, scale and paint bottom; steamship *General G. W. Goethals*, manufacture H. P. piston rings and skim up grooves in bull ring to suit; *General W. C. Gorgas*, braze steam heating line; burn 3 airport holes in shell plating; get out parts for gangway.

PREVIOUSLY REPORTED.

U. S. S. *O-12*, renew all rivets in engine foundations; overhaul all sea valves; overhaul steering and diving gear, etc.; launch *Gloriana*, repair hull and keel; renew awnings; overhaul engine, etc.; steamships *Allianca*, clean boilers; *Ampat*, manufacture, fit, and install new rudder; install asbestos lining on boilers; renew tubes in boilers, etc.

Official Circulars.

Duties of Engineer of Maintenance.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., November 22, 1921.
CIRCULAR No. 660-57.

1. In order to carry out the policy, directed by the Secretary of War in his letter of October 18, 1921, that the Engineer of Maintenance shall perform duties in the Canal Zone analogous to those of an Executive Officer, the Engineer of Maintenance has been relieved of practically all direct charge of divisions and hereafter his duties and status shall be as below set forth. The Superintendent of Dredging will continue, as heretofore, to report to the Engineer of Maintenance.

2. The Engineer of Maintenance is the direct representative of the Governor for securing economy and efficiency in the management of the governmental functions and business operations of The Panama Canal and Panama Railroad on the Isthmus. All matters involving (1) new expenditures for construction, operation, maintenance, government or sanitation, (2) proposed increases in force or established rates of pay and (3) all work requests and requisitions for material to be purchased, will be submitted to him for action.

3. He is authorized and directed to make studies in matters of organization, new projects, pruning out of nonessential operations, reports of expenditures, and other allied matters, with the object of increasing the economy and efficiency of our work. It shall be the duty of the Engineer of Maintenance from time to time to visit the various activities of the Canal and personally observe the operations therein, and those in charge will afford him every facility for this purpose.

4. One of the principal duties of the Engineer of Maintenance will be the coordination of the work of the various divisions. In order that he may do this, all matters which affect more than one division or department must be taken up with the Engineer of Maintenance before being presented to the Governor. This does not prevent a division or department head from taking up direct with the Governor any matter which affects only his own division or department.

5. The Engineer of Maintenance is authorized to give orders to heads of divisions and departments in the name of the Governor, and such orders will be accepted and obeyed as emanating from the Governor. If requested to do so, the Engineer of Maintenance will in all cases give such orders in writing, signed "By order of the Governor."

6. In order that the Engineer of Maintenance may be at all times conversant with the policy

of the Governor in matters affecting the Canal, all papers involving questions of policy will, after decision by the Governor, pass through the hands of the Engineer of Maintenance. All matters of general policy will be in the hands of the Governor as at present; the object of this order being simply to centralize in one head, not hampered too much by other duties, the responsibility for securing the execution and coordination of our economic policies by all departments with maximum efficiency and conservation of expenditures.

7. This order shall go into effect December 1, 1921.

JAY J. MORROW,
Governor.

Reduced Rate on New Orleans and South American Steamship Company's Vessels.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., November 10, 1921.

To all concerned—Information has been received from the Panama Agencies Company that the New Orleans and South American Steamship Company, operating the steamship *Columbia*, which calls at Cristobal monthly, en route to New Orleans, has authorized a reduction in fare of 25 per cent to employees of The Panama Canal and Panama Railroad and dependent members of their family, making the rate \$67.50 for passage from Cristobal to New Orleans.

On account of the vessel's itinerary, this rate does not apply on the trip from New Orleans to Cristobal.

C. A. McILVAINE,
Executive Secretary.

Reduced Rate on Pacific Steam Navigation Company's Vessels.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., November 21, 1921.

To all concerned—The Pacific Steam Navigation Company advises that, in future, a rebate of 15 per cent from the minimum first-class fare on their vessels in the New York and Cristobal service will be allowed employees of The Panama Canal and the Panama Railroad Company. After deducting this rebate the fare will be \$124 on the steamers *Essequibo* and *Ebro*, and \$102 on the steamers *Quillota* and *Quilpue*.

C. A. McILVAINE,
Executive Secretary.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Current Net Prices on Coal, Fuel Oil, and Diesel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 235.

PORT OF CRISTOBAL—continued.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	From—	Date.	Vessel.	For—
Nov. 22	Pastores.	United Fruit Co.	Nov. 23	Atenas.	New Orleans.
Nov. 22	Caribbean.	Panama Railroad Cattle Industry.	Nov. 24	San Blas.	Boston via Port Limon.
Nov. 22	Cristobal.	Panama Railroad Steamship Line.	Nov. 24	Zacapa.	New Orleans via Bocas del
Nov. 23	Atenas.	United Fruit Co.	Nov. 26	Allianca.	Toro and Habana.
Nov. 24	Cristobal.	United Fruit Co.	Nov. 26	Coronado.	New York via Haiti.
Nov. 24	Caribbean.	St. Nazaire and waypoints.	Nov. 26	Puerto Rico.	Kingston.
Nov. 26	Coronado.	Port Limon.	Nov. 26	Caribbean.	Puerto Colombia.
			Nov. 26	Ampat.	Panama Railroad Cattle Industry.
					Cartagena.
					San Lorenzo.

* Other than ships passing through the Canal.

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THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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The Panama Canal Record, Balboa Heights, Canal Zone, or

The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office
at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., December 7, 1921. No. 17.

Passenger Lists.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., December 1, 1921.

CIRCULAR No. 679-10:

Effective January 1, 1922, Circular No. 679-3, requiring passenger lists from vessels arriving at or departing from Canal Zone ports, or passing through the Canal Zone, is modified as follows:

1. Lists of passengers landing at or departing from the Canal Zone are required on Panama Canal forms, supplies of which may be procured from this office or The Panama Canal, Washington, D. C. Two copies of each list will be required.

2. Lists of incoming passengers shall be delivered to the Boarding Officer on arrival and outgoing lists shall be delivered to the Customs Office before obtaining clearance. However, with the consent of the Bureau of Customs previously obtained, outgoing lists may be furnished through an agency on the Isthmus within 48 hours after clearance of the vessel.

3. Lists of incoming transit passengers continuing in the vessel in which they arrive, through the Canal or a Canal port are required in duplicate, showing simply the names and numbers.

4. Nothing in this notice shall be construed as changing the requirements now in effect regarding information to be furnished regarding prohibited aliens.

5. Paragraphs 8 and 15 of Circular No. 679, revised, are amended accordingly.

JAY J. MORROW,
Governor.

Trips Through the Canal.

To accommodate visitors and residents on the Isthmus who wish to make the trip through the Canal, the following lines operating passenger vessels through the Canal are accepting passengers from Cristobal to Balboa, or Balboa to Cristobal, at the rate of \$10 per adult passenger for first-class transportation, including meals served aboard ship during the time of transit:

Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line), Pacific Mail Steamship Company. (The Pacific Mail's rate for the trip is \$6.)

The Pacific Steam Navigation Company has approximately 2 passenger ships through the Canal each way per week, and the other lines mentioned have 1 sailing each way, approximately, every week. Dates of sailing are advertised on the Isthmus, or may be obtained by telephone from the offices of the companies. All of these lines have offices at both ends of the Canal.

Income Tax Receipts Not Required in Connection With Transportation.

The Commissioner of Internal Revenue in the United States has made a decision that American citizens departing from the United States will not be required to present income tax clearance papers.

This information is published for the benefit of Canal employees arranging transportation from the United States.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, December 3, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.						
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.					
Chas. H. Cramp	26	15	07	27	6	13	27	13	59	27	14	57	American	Atl. Gulf & Pacific Co. (S. B.)	420	54	0	20	0	General	2,200	6,755	4,750	
Reahine	26	18	50	27	7	30	27	15	21	28	0	45	British	New Zealand Shipping Co.	481	60	0	26	0	(*)	3,574	11,027	8,050	
Felix Taussig	27	5	52	27	8	40	27	16	17	27	17	37	American	Crowell & Thurlow	395	55	0	24	0	General	6,000	6,520	4,472	
Alberto de	27	7	00	27	9	10	27	17	13	27	18	10	British	Imperial Oil Co.	463	60	0	20	0	Ballast	8,491	6,096		
Transcarib	26	10	00	27	9	20	27	17	13	27	18	10	American	Trans-Caribbean Co.	19	6	0	27	0	1	2	2	1	
Hollen	27	17	12	28	6	20	28	14	05	28	15	02	Norwegian	Brugsgaard Kiosterud	400	52	0	19	0	Ballast	5,730	4,011		
West Farolan	27	14	42	28	7	45	28	14	56	28	16	10	American	Williams, Dimond & Co. (S. B.)	431	54	0	19	6	(s)	2,999	7,946	5,745	
Alvarado	28	8	50	28	9	40	28	16	40	28	20	37	American	Swayne & Hoyt	245	41	0	17	0	General	2,500	2,122	1,504	
Eastern Mer-																								
chant	28	15	55	29	6	18	29	13	41	29	14	34	American	Williams, Dimond & Co. (S. B.)	445	58	0	19	6	General	3,072	8,617	6,297	
City of Dur-	29	9	25	30	6	35	30	14	08	30	15	12	British	Hall Line, Ltd.	407	51	0	27	2	General	7,900	6,069	4,507	
Andrea F.																								
Lucienbach	29	21	40	30	7	35	30	14	53	30	16	05	American	Luckenbach Line	527	68	0	19	6	General	3,500	11,487	8,732	
Brush	30	8	04	30	8	47	30	15	58	30	17	23	American	N. Atl. & Western S. S. Co.	390	54	0	20	0	General	2,600	6,161	4,424	
Mississippi	30	10	50	30	11	05	30	18	12	30	19	25	French	Shawmut Steamship Co.	401	54	0	26	0	Coal	7,496	6,523	4,623	
Yucatan	29	16	55	30	11	35	30	18	00	30	20	20	French	French Line	410	52	0	16	0	General	456	6,942	5,001	
Steel Seafarer	30	11	32	30	11	50	30	19	55	30	21	20	American	United States Steel Products Co.	425	56	0	26	0	General	7,680	7,634	5,558	
Urumbaba	24	15	21	30	12	20	30	20	45	30	22	00	Peruvian	Peruvian Line	381	41	0	19	0	General	525	4,803	2,951	
Laura C. Hall	29	16	55	1	6	07	1	14	03	2	12	23	British	Pacific Metals Corporation	81	26	0	9	0	General	23	132	72	
Iowan	30	22	47	1	6	29	1	15	09	American	United American Line	408	54	0	19	0	General	2,001	7,091	5,002				
Ocean Monarch	1	6	17	1	11	45	1	19	11	1	20	50	British	Monarch Steamship Co.	394	48	0	25	9	General	5,869	4,810	3,558	
Teupaisan																								
Maru	1	12	00	1	12	15	1	20	09	1	22	49	Japanese	Mitsui & Co.	381	54	0	19	0	Ballast		5,560	3,608	
Port Albany	1	2	55	1	12	50	1	20	56	1	22	10	British	Commonwealth and Dom. Line	426	54	0	27	5	Railroad iron, etc	5,439	7,506	5,261	
Selma City	2	5	33	2	6	20	2	14	01	2	15	05	American	United States Steel Products Co.	443	56	0	25	0	Steel and cotton	7,408	7,539	5,448	
S. C. 284																								
Cambrian	2	17	00	3	7	00	3	13	36	3	14	55	British	United States Navy	446	7	0	41	6	Yokohama				
Laurel Leaf	2	14	21	3	6	20	3	15	11	3	15	30	British	British Government	370	51	4	27	6	Balboa	7,943	5,791	3,714	
Birmingham																								
City	2	19	00	3	8	50	3	16	17	3	17	25	American	United States Steel Products Co.	412	55	0	28	5	Fuel o.i				
Barina	26	16	33	3	11	02	3	17	56	3	20	19	British	Pacific Steam Navigation Co.	220	37	0	12	2	General (*)	8,336	6,841	4,986	

* Launch.

* Cruiser.

* Railroad material, textile goods, and general merchandise.

* Pig iron, glass, and general.

* Steel, sulphate, ammonia, and general.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Heraldes	26	10.00	27	7.43	27	15.29	27	17.25	Norwegian	Brunsgaard Kiosterud	389.8	54.1	24.0	Portland	Genoa	Wheat	7,250	5,680	4,220
Julia Luckenbach	26	19.30	27	8.35	27	15.27	27	15.27	American	Luckenbach Line	436.6	57.2	29.3	Seattle	New York	Lumber, general	7,572	8,543	6,427
Henry S. Grove	27	2.00	27	9.43	27	16.47	27	16.17	American	Atl. Gulf & Pacific S. Co.	404.6	53.9	26.2	Portland	Baltimore	General	5,943	6,754	4,087
Flowergate	27	8.30	27	11.04	27	19.12	27	21.15	Br-tish	Turnbull, Scott & Co.	400.8	53.6	25.0	Itouque	Genoa	Nitrate	7,155	5,771	4,047
Jamaica	28	3.50	28	8.41	28	15.05	3	12.27	British	Pacific Steam Navigation Co.	220.0	34.0	11.0	Tumaco	Pto. Colombia	General	188	1,187	622
Iolos	28	7.00	28	7.53	28	16.30	29	7.37	Greek	Hellenic Trans. Steamship Co.	400.0	52.2	25.0	Portland	Norfolk	Wheat	6,675	5,771	4,047
Laura C. Hall	28	18.10	29	9.23	29	16.55	1	6.07	British	Pacific Metals Corporation	81.0	25.6	9.1	Buenaventura	Cristobal	(*)	68	132	72
Kennett	28	18.10	29	11.17	29	17.57	30	7.17	American	Alaska Steamship Co.	345.3	49.6	24.0	Seattle	New York	General	4,777	4,593	3,381
Attanerhavet	29	8.00	29	12.37	29	19.45	30	7.50	Danish	Atlantehavet Steamship Co.	367.0	50.0	25.0	Tocopilla	Kiel Canal	Nitrate	6,950	5,814	4,490
Salvador	30	7.00	30	8.06	30	15.40			British	Pacific Steam Navigation Co.	215.0	33.0	13.3	Guayaquil	Cristobal	General	236	1,213	692
Canadian	30	20.00	1	8.01	1	16.12	1	17.35	British	Canada on Government	400.0	55.9	21.6	Bluffs, N. Z.	New York	General	3,200	5,871	4,094
Spinner	1	18.00	1	8.56	1	17.00	1	18.50	Danish	Orient Steamship Co.	398.7	55.9	21.6	Seattle	Copenhagen	General	6,178	7,133	5,263
Bolivia	1	13.00	1	14.00	1	21.20	2	17.20	American	United States Navy	514.0	65.0	20.0	San Diego	Hampton Rds	General (Navy)	555	1,364	6,346
Gen. H. F.	1	15.00	2	6.40	2	14.52	4	16.40	American	Panama Railroad Steamship Line	323.5	39.0	20.0	Guayaquil	New York	General	2,965	3,013	1,574
Hodges	2	2.00	2	7.37	2	15.00	3	5.00	American	Pacific Steamship Co.	244.6	40.0	14.6	Seattle	Jacksonville	Ballast	2,153	1,514	
City of Seattle	2	9.30	2	10.31	2	17.36	2	19.25	British	Monarch Steamship Co.	420.5	54.3	25.0	Portland	Italy	Wheat	7,668	6,321	4,548
Scottish Monarch	30	15.15	2	11.17	2	18.42	2	19.35	American	United States Navy	243.0	36.3	17.1	Bahoa	La Guaira	Wheat	9,400	8,238	6,270
Niagara	30	11.45	2	12.41	2	20.50	2	22.20	British	Andrew Weir & Co.	460.0	55.1	25.0	Itouque	Norfolk	Nitrate	1,294	15,234	10,405
Suvere	2	13.45	3	6.26	3	13.52	3	14.25	American	Mason Navigation Co. (S. B.)	517.0	72.2	20.0	Rondulu	Baltimore	(*)	7,000	7,107	4,916
Buckeye State	2	19.30	3	7.48	3	15.30	3	18.20	American	United American Line	377.7	53.7	26.7	Seattle	Hamburg	General	1,300	4,147	3,259
Pennsylvania	2	22.00	3	8.51	3	16.12	3	16.12	American	Luckenbach Line	331.5	47.0	16.5	Portland	Mobile	General	1,300	4,147	3,259
Pleades	3	9.00	3	11.00	3	18.00	3	18.00	American	Union Oil Co.	435.0	56.2	20.0	San Francisco	Port Lobos	Ballast	6,686	5,930	4,903
Los Angeles	3	11.30	3	13.47	3	22.10	4	12.18	Japanese	Mitsui & Co.	400.0	53.0	27.0	Portland	Cristobal	Wheat			
Ural San Maru	2	11.54	3	14.30	3	21.18			American	United States Navy	110.0	16.0		Bahoa					

* Coffee, gold, and platinum.

* Patrol yacht.

* Collier.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS				*DEPARTURES			
Date.	Vessel	Line.	From—	Date.	Vessel.	Line.	For—
Nov. 27	Gen. G. W. Goethals	Panama Railroad Steamship Line.	New York via Haiti	Nov. 27	Abangarez	United Fruit Co.	Bocas del Toro.
Nov. 27	Abangarez	United Fruit Co.	New Orleans and Habana.	Nov. 27	Cristobal	Panama Railroad Steamship Line.	Norfolk
Nov. 27	Solana	Pacific Mail Steamship Co.	Tampico.	Nov. 28	Solana	Pacific Mail Steamship Co.	Tampico.
Nov. 28	Gen. W. C. Gorgas	Panama Railroad Steamship Line	New York via Haiti.	Nov. 30	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	New York
Nov. 28	Parishina	United Fruit Co.	New Orleans.	Nov. 30	Abangarez	United Fruit Co.	New Orleans.
Nov. 29	Ulua	United Fruit Co.	New York via Habana.	Nov. 30	Ulua	United Fruit Co.	New York via Port Limon
Nov. 30	Abangarez	United Fruit Co.	Bocas del Toro.				and Habana.
Nov. 30	Camden	United Fruit Co.	Tampico.	Dec. 1.	Sixaola.	United Fruit Co.	New York via wayports.

(Continued on page 246, column 2.)

Commercial Traffic Through the Panama Canal in November, 1921, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tons.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>United States coastwise:</i>							<i>Long tons.</i>
United States.....	24	107,747	136,349	164,716	108,063	\$131,558.19	91,067
<i>From east coast of United States to Far East:</i>							
United States.....	7	30,839	40,612	49,748	30,649	38,548.75	47,236
Japanese.....	6	24,839	28,740	37,061	24,221	30,689.55	38,970
British.....	4	16,171	21,763	25,378	16,308	20,213.75	29,822
Totals.....	17	71,849	91,115	112,187	71,178	89,452.05	116,028
<i>From Europe to west coast of United States:</i>							
Norwegian.....	3	12,419	14,123	16,762	11,801	15,523.75	10,011
British.....	3	11,704	14,437	18,997	11,769	13,617.04	
Japanese.....	2	9,452	9,828	12,453	9,254	9,632.00	
United States.....	2	4,397	5,829	7,040	4,218	5,089.41	2,464
Dutch.....	1	4,863	6,066	7,655	4,799	6,078.75	3,048
Swedish.....	1	2,286	4,013	3,764	2,852	2,857.50	1,753
French.....	1	2,264	2,933	3,563	2,293	2,830.00	37
Totals.....	13	47,385	57,229	70,234	46,986	55,628.45	17,313
<i>From east coast of United States to west coast of South America:</i>							
British.....	5	12,984	17,459	22,719	13,257	14,812.06	4,833
United States.....	5	13,262	17,919	21,966	13,320	15,632.84	5,500
Norwegian.....	2	4,035	4,990	6,524	4,053	5,043.75	4,545
Totals.....	12	30,281	40,368	51,209	30,630	35,488.65	14,878
<i>From Europe to west coast of South America:</i>							
British.....	5	16,295	20,179	25,735	15,997	20,368.75	10,450
Dutch.....	1	4,085	4,393	4,368	2,726	5,106.25	1,334
Danish.....	1	4,082	4,490	4,076	2,506	3,232.80	
French.....	1	3,566	4,081	5,681	3,600	4,457.50	237
Italian.....	1	3,097	3,599	5,376	3,082	3,871.25	524
German.....	1	2,531	3,374	4,174	2,584	3,163.75	3,062
Peruvian.....	1	2,337	2,357	2,477	2,352	2,828.40	3,866
Totals.....	11	35,993	42,473	51,887	32,847	43,028.70	19,473
<i>From Cristobal to west coast of South America:</i>							
British.....	3	1,262	1,648	2,280	1,365	1,577.50	407
Peruvian.....	2	3,021	5,910	9,420	5,100	3,776.25	836
Chilean.....	2	2,738	4,733	5,282	3,233	3,422.50	997
United States.....	2	672	700	1,230	744	672.00	29
Panamanian.....	1	104	120	193	116	86.40	
Totals.....	10	7,797	13,111	18,405	10,558	9,534.65	2,289
<i>From Europe to Australasia:</i>							
British.....	8	45,599	58,006	71,515	45,898	56,758.80	48,400
<i>From east coast of United States to Australasia:</i>							
British.....	4	13,831	16,166	20,245	12,413	17,055.75	15,722
United States.....	1	4,335	4,321	5,716	4,271	5,185.20	5,937
Totals.....	5	18,166	20,487	25,961	16,684	22,240.95	21,659
<i>From Europe to west coast of Canada:</i>							
United States.....	2	9,607	12,042	15,601	9,607	12,008.75	6,071
British.....	1	5,154	6,588	8,263	5,163	6,442.50	180
French.....	1	4,874	5,001	6,687	4,236	6,001.20	360
Japanese.....	1	4,437	4,471	5,859	4,293	3,327.75	
Totals.....	5	24,072	28,102	36,410	23,299	27,780.20	6,611
<i>From east coast of Mexico to west coast of United States:</i>							
Norwegian.....	1	4,418	5,043	6,987	4,422	5,522.50	9,300
United States.....	1	4,206	4,903	6,752	4,205	5,257.50	11,000
Totals.....	2	8,624	9,946	13,739	8,627	10,780.00	20,300
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	2	2,986	3,756	4,796	2,963	3,732.50	3,717
<i>From Europe to west coast of Central America:</i>							
German.....	1	1,118	1,361	2,064	1,182	1,397.50	490
British.....	1	717	916	1,449	875	896.25	308
Totals.....	2	1,835	2,277	3,513	2,057	2,293.75	798

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From Cristobal, C. Z., to west coast of Central America:</i>							<i>Long tons.</i>
British.....	2	1,401	1,577	2,731	1,463	\$1,751.25	871
<i>From United States to west coast of Canada:</i>							
British.....	1	6,766	8,326	10,893	6,791	8,457.50	4,234
<i>From east coast of Canada to west coast of South America:</i>							
British.....	1	5,166	6,096	8,461	5,960	4,389.12	.....
<i>From east coast of Mexico to west coast of South America:</i>							
Norwegian.....	1	4,407	5,051	7,022	4,438	5,508.75	9,000
<i>From east coast of South America to Far East:</i>							
Japanese.....	1	3,590	4,101	5,760	3,548	4,487.50	3,574
<i>oreign ships in ballast, United States coastwise:</i>							
Japanese.....	1	3,421	4,305	5,467	3,409	4,276.25	.....
<i>From Europe to Hawaii:</i>							
Danish.....	1	2,467	4,507	4,088	2,506	3,083.75	5,943
<i>From east coast of United States to Central America:</i>							
United States.....	1	719	730	818	708	878.40	6
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	540
<i>Miscellaneous routings:</i>							
United States ¹	1	382	483	791	393	347.76	.....
British.....	1	(²)	(²)	(²)	(²)	6,005.50	(²)
Totals.....	2	382	483	791	393	6,353.26	.....
Totals, November, 1921.....	123	431,267	539,017	671,741	429,608	528,209.07	336,681
Totals, October, 1921.....	131	459,713	571,175	708,363	458,589	541,994.93	374,437
Totals, November, 1920.....	123	387,397	467,951	593,207	380,583	483,998.44	491,109

PACIFIC TO ATLANTIC.

<i>From west coast of United States to Europe:</i>							<i>Long tons.</i>
British.....	5	19,900	25,833	31,301	20,026	\$24,875.00	34,450
Japanese.....	4	17,304	19,008	25,389	17,022	21,284.30	30,944
United States.....	3	12,773	15,898	20,444	12,766	15,966.25	26,486
Swedish.....	2	6,659	9,630	9,444	7,159	8,323.75	14,737
Greek.....	2	6,212	7,429	8,683	5,312	7,671.40	11,956
Norwegian.....	2	5,961	8,341	9,462	5,888	7,451.25	14,337
Spanish.....	2	5,906	7,028	9,214	5,475	7,382.50	12,731
Dutch.....	1	2,221	3,480	3,720	2,254	2,776.25	5,850
Totals.....	21	76,936	96,647	117,657	75,900	95,730.70	151,491
<i>United States coastwise:</i>							
United States.....	17	70,791	86,958	108,930	69,725	88,339.80	101,460
<i>From west coast of South America to Europe:</i>							
British.....	6	20,183	26,529	32,274	20,208	25,228.75	35,611
Italian.....	2	6,586	8,083	10,548	6,429	8,232.50	8,693
Dutch.....	2	3,667	5,755	5,702	3,710	4,583.75	7,150
French.....	1	3,631	4,166	5,818	3,712	4,538.75	6,100
Danish.....	1	2,490	4,490	4,076	2,506	3,112.50	6,950
German.....	1	1,783	2,924	2,990	1,757	2,228.75	4,500
Totals.....	13	38,340	51,947	61,408	38,322	47,925.00	68,994
<i>From west coast of South America to east coast of United States:</i>							
United States.....	6	18,978	24,054	30,241	18,656	23,722.50	29,866
British.....	4	11,795	15,706	20,878	12,505	14,743.75	13,934
Norwegian.....	1	879	1,457	1,462	890	1,098.75	425
Totals.....	11	31,652	41,217	52,581	32,051	39,565.00	44,225
<i>From west coast of South America to Cristobal, C. Z.:</i>							
British.....	5	2,526	2,962	4,546	2,617	3,136.40	1,215
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	4,381
United States.....	2	672	700	1,230	744	840.00	1,210
Chilean.....	1	1,463	2,577	2,553	1,600	1,828.75	121
Totals.....	10	7,682	12,149	17,690	10,061	9,581.40	6,927

¹ Yacht. ² British cruiser of 12,011 tons displacement.

PACIFIC TO ATLANTIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From west coast of Canada to Europe:</i>							<i>Long tons.</i>
British.....	5	20,968	26,027	33,647	21,095	\$26,210.00	25,030
Dutch.....	2	9,620	11,375	15,253	9,648	12,025.00	16,141
Totals.....	7	30,588	37,402	48,900	30,743	38,235.00	41,171
<i>From west coast of South America to east coast of Mexico:</i>							
Norwegian.....	2	8,825	10,094	17,009	8,860	7,267.68	
British.....	1	4,645	5,311	7,270	4,513	3,823.92	
United States.....	1	4,203	5,041	6,702	4,203	3,629.52	
Totals.....	4	17,673	20,446	30,981	17,576	14,721.12	
<i>From Far East to east coast of United States:</i>							
Japanese.....	2	9,388	10,783	14,938	9,207	11,735.00	12,603
British.....	1	3,695	3,991	4,329	2,798	4,618.75	4,405
United States.....	1	3,425	4,385	6,106	4,355	4,281.25	6,072
Totals.....	4	16,508	19,159	25,373	16,360	20,635.00	23,080
<i>From west coast of Canada to east coast of United States:</i>							
United States.....	3	14,829	17,011	21,392	15,224	18,536.25	15,332
<i>From west coast of Central America to Cristobal, C. Z.:</i>							
British.....	3	2,164	2,448	4,292	2,272	2,705.00	250
<i>From Australasia to Europe:</i>							
British.....	1	5,544	6,581	8,734	5,543	6,930.00	5,775
<i>From Far East to Europe:</i>							
Japanese.....	1	4,365	4,397	5,870	4,266	5,276.40	7,300
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,034	4,174	4,748	2,925	3,792.50	2,408
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	1	1,654	2,163	2,643	1,654	2,067.50	158
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	188
<i>Miscellaneous:</i> ¹							
United States.....	1	56	73	79	54	52.56	
Totals, November, 1921.	99	322,430	403,394	512,416	323,278	394,839.63	468,759
Totals, October, 1921...	124	406,483	498,379	627,449	405,087	505,940.69	611,338
Totals, November, 1920.	115	378,420	461,924	590,865	375,640	449,913.67	493,801

¹ Yacht.**Notice to Mariners.—Obstruction to Navigation.**

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., December 1, 1921.

The master of the steamship *General H. F. Hodges*, reports having passed at 12.45 p. m., December 1, about 8 miles east of Bona Island, a log about 40 feet long, dangerous to navigation.

JAY J. MORROW,
Governor.

Notice to Mariners.—Galera Zamba Light, Colombia, Reported Extinguished.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., December 3, 1921.

The master of the steamship *Lake Fariston* reports the Galera Zamba light, Colombia, not burning at midnight on November 29, 1921. The Captain of the Port, Puerto Colombia, reports light extinguished since November 25, 1921.

JAY J. MORROW,
Governor.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending December 3, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Abangarez	United Fruit Co.	November 27	November 27	(¹)	470
Solana	Pacific Mail Steamship Co.	November 27	November 28	9,500	(²)
Gen. G. W. Goethals	Panama Railroad Steamship Line.	November 27	November 30	1,045	2,026
Urubamba	Peruvian Line.		November 30		546
Parismina	United Fruit Co.	November 28	December 1	704	26
Gen. W. C. Gorgas	Panama Railroad Steamship Line.	November 28	December 2	2	693
Jamaica	Pacific Steam Navigation Co.	November 28	December 3	170	1
Mississippi	French Line.	November 29	November 30	25	(²)
Laura C. Hall	Pacific Metals Corporation.	November 29	December 1	68	26
Ulua	United Fruit Co.	November 29	November 30	207	130
Salvador	Pacific Steam Navigation Co.	November 30		236	
Abangarez	United Fruit Co.	November 30	November 30	(²)	5
Sixaola	United Fruit Co.	November 30	December 1	1	1
Santa Marta	United Fruit Co.	November 30	December 1	90	274
Camden	United Fruit Co.	November 30	December 2	4,015	(²)
Asian	Leyland Line.	December 1	December 2	543	48
Gen. H. F. Hodges	Panama Railroad Steamship Line	December 2		482	
San Bruno	United Fruit Co.	December 3	December 3	15	343
Caribbean	Panama Railroad Steamship Line	December 3		800	
Barima	Pacific Steam Navigation Co.		December 3		516

* No cargo discharged.

* No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending December 3, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Aysen	Peruvian Line	November 27	November 30	296	231
Laura C. Hall	Pacific Metals Transportation Co.	November 28	November 29	3	
Salvador	Pacific Steam Navigation Co.	November 30	November 30	4	
Anyo Maru	Toyo Kisen Kaisha.	December 1	December 2	947	
Baja California	A. A. S. S. Co.	December 1	December 2	905	
Laura C. Hall	Pacific Metals Transportation Co.	December 1	December 1		56
Barima	Pacific Steam Navigation Co.	December 3	December 3		6

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the week ended December 5:

Steamships *Barima*, buff ridge off of H. P. cylinder and manufacture 6 rings to suit; *Jamaica*, cast and machine valve for sanitary pump, etc.; tug *Porto Bello*, scale boiler; braze surface blow pipe; repair reversing ram; brick boiler, etc.; barges *Nos. 3 and 17*, clean and paint bottom; test all tanks and stop all leaks; steamships *General H. F. Hodges*, renew steering chains and weld steering rods; cover H. P. receiver pipe; repair cargo hooks; calk decks, etc.; *General O. H. Ernst*, repair throttle valve; rebore spindle hole in M. P. valve; cut oil groove and manufacture new balance ring; anneal and repair steering chains, etc.; *Advance*, clean furnaces; furnish machinist and riggers to assist engineers to lay up machinery; launch *Patrol*, steamship *City of Seattle*, and motor ship *Laura C. Hall*, minor repairs.

PREVIOUSLY REPORTED.

U. S. S. *O-12*, renew all rivets in engine foundations; overhaul all sea valves; overhaul steering and diving gear, etc.; barges *Nos. 15 and 48*, scale and paint bottom; steamship *General W. C. Gorgas*, braze steam heating line; burn 3 air port holes in shell plating, and install ports; get out parts for gangway, etc.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States "Pancanal, Washington."

Official Circular.

Work Requests, Estimates, and Reports of Costs.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., November 26, 1921.

CIRCULAR No. 642-5:

1. All work requests now requiring the approval of the Governor will hereafter be submitted direct to the Engineer of Maintenance. Such requests will show the estimated cost and must be accompanied by data showing that an adequate estimate including all elements has been made, and no work will be undertaken unless such estimate has been made.

2. The Accounting Department will furnish the Engineer of Maintenance monthly a list of all jobs, for which the estimate was \$500, or more, and for which the cost upon completion varied 10 per cent, or more, also a list of the jobs, the estimated cost of which was under \$500, and the variation was 25 per cent, or more. Heads of departments and divisions will see that every effort is made to keep the final costs within the estimates of the work done and, with the exception of the Superintendent of the Mechanical Division, will submit explanations to the Engineer of Maintenance in all cases in which the variation is greater than the percentages stated. Work performed for the Army, Navy, or other departments of Government, which is payable from appropriations, must not, under any circumstances, exceed the specific allotments for such work.

3. Special care must be used in making estimates for work for the Army or Navy, or other than Canal or Railroad interests. Wherever it is practicable to do so, flat prices for doing work may be quoted without regard to the final costs. For jobs which will cost less than \$100, heads of departments and divisions are authorized to make such quotations. For jobs costing more than \$100, any flat price for the performance of work must be first approved by the Engineer of Maintenance. This rule shall not apply to the Superintendent of the Mechanical Division, who, for the time being, is authorized to quote flat prices for performance of work in such cases as he may deem practicable. Inasmuch as there may be some cases in which the final costs will exceed the prices quoted, it is essential that some percentage be added to the estimated cost in order to prevent ultimate losses and insure a small profit. For any interest that desires work to be done for a flat price, there should be added to the estimates of costs about 10 per cent of same to insure against loss.

4. Generally, no estimates of costs of performance of work should be made without charge therefor, unless such estimates can be made by the regular office forces and without material additional expense to the Canal. However, both the Engineer of Maintenance and the Superintendent of the Mechanical Division are authorized to make other estimates without charge whenever they have reasonable grounds to believe that the work for which the estimate is made will be turned over to the Canal to perform within a reasonable time thereafter. The necessity for exercising care in the incurring of expenses for making estimates is the fact that the amount of such expenses increases the expenses of the Canal without any corresponding benefit unless the Canal forces ultimately perform the work.

JAY J. MORROW,
Governor.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 241.

PORT OF CRISTOBAL—continued.

Date.	*ARRIVALS.		*DEPARTURES.		For—
	Vessel.	Line.	Vessel.	Line.	
Nov. 30	Sivola	United Fruit Co	Santa Marta	United Fruit Co	New York via wayports.
Nov. 30	Santa Marta	United Fruit Co	Parissima	United Fruit Co	New York via Bocas del Toro and Habana.
Dec. 3	Asan.	Leyland Line	Gen. W. C. Gorgas	Panama Railroad Steamship Line.	New York via Haiti.
Dec. 3	Cambra.	United States Army	Camden	United Fruit Co	Tampico.
Dec. 3	San Bruno	United Fruit Co	Asian	Leyland Line	New Orleans.
Dec. 3	Caribbean	Panama Railroad Steamship Line.	San Bruno	United Fruit Co	Boston.

"Transport.

PORT OF BALBOA.

Nov. 27	Asyen	South American Steamship Co	Nov. 30	Asyen	Valparaiso.
Nov. 28	Lady Sybil	International Petroleum Co	Dec. 2	Anyo Maru	Valparaiso.
Dec. 1	Anyo Maru	Toyko Kisen Kaisha	Dec. 2	Baja California	Champerico.
Dec. 1	Baja California	A. O. Lindvig			

* Other than ships passing through the Canal.

JAN 6 1922

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., December 14, 1921. No. 18.

Executive Order.

By virtue of authority vested in me under Section 5 of The Panama Canal Act, approved August 24, 1912, I, Warren G. Harding, President of the United States of America, hereby establish the following Executive Order in connection with the payment of tolls to be effective immediately:

1. Vessels transiting The Panama Canal from Cristobal to Balboa and return, for the sole purpose of having repairs made at the Balboa dry dock and shops, will be exempt from the payment of tolls as prescribed in the Proclamation of the President of the United States dated November 13, 1912, but in lieu thereof shall pay charges for pilotage, towage, and lockages for such transit at rates based on cost as determined by the Governor of The Panama Canal from time to time.

2. Should a vessel, after having made the transit from Cristobal to Balboa under the above conditions, decide not to return to Cristobal, or should it discharge or receive cargo, passengers, mail, or baggage at Balboa or accomplish anything else for which vessels usually transit the Canal other than to have repairs made, tolls will be collected for the transit from Cristobal to Balboa at the prescribed rates before such vessel will be given a clearance and allowed to proceed, the amount previously collected for lockage and pilotage through the Canal being applied as part payment thereof.

WARREN G. HARDING.

THE WHITE HOUSE,
November 17, 1921.

[No. 3581.]

This Order is being published as Panama Circular No. 601-126.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending December 10, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Metapan	United Fruit Co.	December 4.	December 4.	(²)	7
Salvador	Pacific Steam Navigation Co.		December 6.		246
Caribbean	Panama Railroad Steamship Line.		December 7.		36
Gen. O. H. Ernst.	Panama Railroad Steamship Line.	December 4.	December 7.	736	1,169
Advance	Panama Railroad Steamship Line.	December 4.		1,197	
La Navarre	French Line	December 4.	December 8.	72	316
Chancellor	Harrison Line	December 5.	December 6.	(²)	724
Cartago	United Fruit Co.	December 5.	December 7.	498	(¹)
Tolosa	United Fruit Co.	December 6.	December 7.	259	28
Huallaga	Peruvian Steamship Line.	December 6.		1,844	
Santa Tecla	W. R. Grace & Co.	December 6.	December 7.	55	(¹)
Mamei	Panama Railroad Steamship Line.	December 6.		7,034	
Achilles	Panama Railroad Steamship Line.	December 6.		12,035	
Ecuador	Pacific Mail Steamship Co.	December 6.	December 7.	126	95
Metapan	United Fruit Co.	December 7.	December 7.	14	4
Panama	Panama Railroad Steamship Line.		December 9.		1,432
Oruba	Pacific Steam Navigation Co.	December 7.	December 7.	4	(¹)
La Paz	Pacific Steam Navigation Co.		December 8.		254
Balboa	Caribbean Steamship Co.	December 8.		6104	
Cuba	Pacific Mail Steamship Co.	December 8.		410	
Manavi	Pacific Steam Navigation Co.	December 8.		736	
Jamaica	Pacific Steam Navigation Co.	December 9.		14	
Acajutla	Pacific Steam Navigation Co.	December 9.		116	
Venezuela	Royal Netherlands W. I. Mail	December 9.	December 9.	83	(²)
Venezuela	Pacific Mail Steamship Co.	December 9.	December 10.	53	202
San Gil	United Fruit Co.	December 10.	December 10.	30	263
William Green	Huasteca Petroleum Co.	December 10.		10,000	
Colon	Panama Railroad Steamship Line.	December 10.		1,418	

* Dutch.

* No cargo discharged.

* No cargo laded.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, December 10, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.																					
Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.			
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.		
Tacoma Maru.	3	23	35	4	6	25	4	14	11	440	51	0	24	6	Burns Aires.	Kobe	General.	3,934	6,146	4,241	
Alakama.	26	19	05	4	6	30	4	14	11	148	30	0	20	0	Cristobal.	Los Angeles.					
Patuxent.	5	7	00	5	7	00	5	13	27	156	24	0	15	0	Cristobal.	Balboa					
Mahana	5	40	5	8	20	5	13	30	British.	501	63	0	15	0	Liverpool.	Auckland	General.	3,857	12,151	8,727	
Chancellor	5	6	13	6	10	6	14	14	British.	385	62	0	19	8	Liverpool.	Vancouver	General.	4,298	5,370	3,789	
Salvador	30	15	40	6	6	24	6	15	05	215	33	0	13	0	Cristobal.	Guayaquil	General.	246	1,213	692	
Admore	6	12	49	6	7	35	6	13	49	449	59	0	19	6	New York.	Talara	Ballast.	8,612	6,457		
Gen. O. H. Ernst.	4	19	03	7	6	20	7	15	10	American.	356	45	3	30	New York.	Guayaquil.	General.	1,169	4,503	2,764	
Ethelston.	6	15	48	7	6	22	7	14	59	British.	340	47	0	24	6	Cardiff.	San Francisco	Coal.	4,894	4,310	3,217
F. F. Luckenbach.	6	20	50	7	9	05	7	15	26	American.	446	56	0	30	3	New York.	Seattle	General.	2,000	8,508	6,179
Fukuyo Maru.	6	23	40	7	9	05	7	16	36	Japanese.	400	53	0	26	0	New York.	Shanghai	General.	7,000	5,911	4,349
Portland Maru.	7	6	15	7	11	05	7	19	55	Japanese.	385	51	0	26	4	New York.	Kobe	General.	6,212	5,919	4,424
Minneapolis.	7	11	43	7	12	05	7	19	27	American.	390	54	0	18	0	New York.	Tacahuanu	General.	1,601	6,106	
Baron Judenburg.	7	13	00	8	6	22	8	14	03	British.	410	54	0	25	0	Cardiff.	Honolulu	Coal.	6,021	6,013	4,404
Taoro.	7	15	25	8	7	42	8	16	25	British.	477	62	9	26	6	London.	Bluff	Coal.	5,000	11,192	8,149
La Paz.	7	16	24	8	8	15	8	15	58	British.	308	34	2	15	6	Hull.	Valparaiso.	General, coal.	2,373	7,216	4,912
Tacoma.	7	18	30	8	8	50	8	17	00	American.	406	34	0	17	0	Habana.	Balboa				
Advance.	4	14	15	8	10	39	8	13	28	American.	295	38	4	10	3	New York.	Satun Lake.	Ballast.	2,947	2,947	2,113
Tricolor.	8	7	10	8	11	35	8	18	23	Norwegian.	351	50	1	17	6	Buenos Aires.	San Francisco	General.	3,000	4,483	3,293
Mamei.	6	8	40	9	6	30	9	9	20	American.	332	52	0	11	0	Norfolk.	Gatun Lake	Ballast.	4,290	3,638	
Alaskan.	9	9	54	9	10	12	9	16	55	American.	470	57	2	17	6	Boston.	Tacoma.	General.	2,890	9,250	6,816
Edward Luckenbach.	9	12	10	9	13	10	9	19	33	American.	436	57	0	19	0	Philadelphia.	Los Angeles.	General.	2,200	8,543	6,427
Golden Gate.	8-15	20	41	10	6	10	10	14	56	10	10	42	15	0	Manchester.	San Francisco	Ballast.	2,385	2,167		
Venezuela.	9	16	40	10	11	02	10	17	20	11	17	24	22	0	Baltimore.	San Francisco	General.	1,200	6,033	4,353	
THROUGH THE CANAL—PACIFIC TO ATLANTIC.																					
1. Tug.																					
2. Motor ship.																					
3. Cruiser.																					
4. Barge.																					
5. Bark.																					
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Laureleaf	3	15	11	6	7	00	6	14	19	6	14	19	British	Anglo-Saxon Petroleum Co.	370	1	51	4	18	0	Balboa	Tampico	Ballast
Poplar Branch	5	23	50	6	7	47	6	16	25	6	18	20	British	F. & W. Ritson	396	2	56	2	24	0	Coquimbo	Liverpool	Nitrate, general
Santa Tecla	6	5	00	6	8	45	6	16	12	6	18	35	American	W. R. Grace & Co.	398	6	40	0	16	0	Guayaquil	New York	General
Panaman	6	6	30	6	9	44	6	17	10	6	17	10	American	American-Hawaiian Line	407	7	53	7	23	6	Los Angeles	New York	General
Vanaleite	6	7	35	6	10	19	6	17	45	6	17	45	British	Imperial Oil Co.	500	0	68	0	21	0	San Francisco	Mexico	Ballast
Ecuador	5	18	06	6	11	19	6	18	30	6	17	15	American	Pacific Mail Steamship Co.	500	6	48	7	20	6	San Francisco	Balt more	(7)
Huazala	6	8	15	6	12	06	6	19	55	6	19	55	Peruvian	Panama Line	369	0	44	7	21	6	Callao	Cristobal	General
Nitro	6	11	30	6	12	56	6	21	17	6	21	17	American	United States Navy	369	0	44	7	21	6	Callao	Cristobal	General
Goristan	4	8	00	7	6	54	7	14	44	7	15	22	British	H. M. H. Nemaze	360	0	60	0	22	6	San Diego	New York	General
Cold Harbor	6	20	21	7	7	35	7	15	54	7	16	18	American	N. Atl. & West. S. S. Co. (S. B.)	390	0	54	2	21	0	Los Angeles	Habana	General
Panama	7	16	03	7	8	25	7	17	25	7	22	15	British	Panama Railroad Steamship Line	360	0	50	0	13	6	Balboa	Philadelphia	General
Albertolite	7	1	18	7	8	38	7	17	25	7	22	15	British	Imperial Oil Co. Ltd	463	2	60	0	25	9	Talara	Liverpool	General
Oruba	7	4	00	7	9	55	7	18	25	7	22	16	British	Royal Mail Steam Packet Co.	504	0	58	0	24	0	Valparaiso	Liverpool	General
Essex	7	6	10	7	11	09	7	20	05	7	22	15	British	Federal Steamship Co.	404	4	55	2	23	0	Sydney	London	(8)
Remuera	7	5	00	7	12	57	7	21	00	7	23	15	British	New Zealand Shipping Co.	485	0	62	3	26	0	Wellington	London	(8)
Eusley City	7	23	30	8	7	57	8	15	55	8	20	15	American	Isthmian Steamship Line	396	0	55	0	29	0	Honolulu	New York	(9)
Canadian Con-																							
queror	8	4	00	8	8	49	8	17	05	8	21	30	British	Canadian Government	400	4	52	3	15	0	Wellington	New York	General
Duendes	8	4	10	8	9	51	8	17	09	8	16	05	British	Pacific Steam Navigation Co.	390	0	50	0	23	6	Valparaiso	Liverpool	(10)
Cuba	8	6	30	8	11	17	8	17	48	8	17	48	American	Pacific Mail Steamship Co.	307	8	42	2	17	0	San Francisco	Cristobal	General
Balboa	8	10	00	8	11	40	8	18	35	12	8	48	American	Colombian Maritime Co.	190	0	29	1	15	7	Buenaventura	Cristobal	General
Manavi	8	7	20	8	11	50	8	19	15	12	11	03	British	Pacific Steam Navigation Co.	216	0	35	1	14	9	Guayaquil	Cristobal	General
K. I. Lucken-																							
bach	9	6	55	9	7	40	9	14	08	9	15	52	American	Luckenbach Line	447	0	56	1	21	6	San Francisco	Philadelphia	General
Arcula	9	8	05	9	9	10	9	15	05	9	15	05	British	Pacific Steam Navigation Co.	215	7	33	5	12	9	Champerico	Cristobal	General
Arrican	9	12	05	9	15	05	10	0	14	10	12	14	American	American-Hawaiian Line	470	1	57	2	23	6	San Francisco	Charleston	General
Argyll	9	20	00	10	8	55	10	15	52	10	17	36	French	French Line	320	2	40	7	18	0	Santa Rosalia	Tampico	Ballast
Patuxent	9	22	20	10	9	10	10	15	53				American	United States Navy	156	0	24	0	15	0	High seas	Cristobal	General

* Supply ship.

* Onions, beans, and general.

* Cold storage and general.

* Lumber and canned goods.

* Nitrate, cotton, sugar, hides, cottonseed, and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Dec. 4	Metapan	United Fruit Co.	New Orleans via Habana.	Dec. 4	Metapan	United Fruit Co.	Bocas del Toro.
Dec. 5	La Navarre	French Line	Haute via waypoints.	Dec. 4	Gen. H. F. Hodges	Panama Railroad Steamship Line	New York via Ha ti.
Dec. 5	Cartago	United Fruit Co.	New Orleans.	Dec. 6	Cambrai	United States Army	New York.
Dec. 6	Tolca	United Fruit Co.	New Orleans via Habana.	Dec. 7	Caribbean	Panama Railroad Steamship Line.	Cartagena.
Dec. 6	Achilles	Panama Railroad Steamship Line.	Norfolk.	Dec. 7	Cartago	United Fruit Co.	New Orleans via waypoints.
Dec. 7	Metapan	United Fruit Co.	Bocas del Toro.	Dec. 7	Tolca	United Fruit Co.	New York via Port Limon
Dec. 7	Metapan	Royal Netherlands W. I. M. A. I.	Amsterdam via waypoints.	Dec. 7	Metapan	United Fruit Co.	New Orleans.
Dec. 9	Venezuela	United Fruit Co.	Boston via Port Limon.	Dec. 7	La Navarre	French Line	Haute via waypoints.
Dec. 10	Colon	Panama Railroad Steamship Line.	New York via Port Limon.	Dec. 8	Venezuela	Royal Netherlands W. I. M. A. I.	Port Limon.
	William Green.	Pan-American Pet. Transp. Co.	Tampico.	Dec. 9	San Gil	United Fruit Co.	Boston via Kingston.
				Dec. 10			

* Collier.

* Transport.

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Balboa for Week Ending December 10, 1921.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Laurelleaf	Anglo-Saxon Petroleum Co.	December 3	December 6	7,493	
Gorjistan	H. M. H. Nemaze	December 4	December 7	3	
Ecuador	Pacific Mail Steamship Co.	December 5	December 6	146	
Salvador	Pacific Steam Navigation Co.	December 6	December 6		8
Cuba	Pacific Mail Steamship Co.	December 8	December 8	8	
Acajutla	Pacific Steam Navigation Co.	December 9	December 9	1	

Ships at Canal Repair Shops.

The following vessels were at the Balboa shops for repairs during the two weeks ended December 13:

Dredges *No. 84*, dock and undock; stage and clean; scale bottom; paint bottom up to light load line, 2 coats of anticorrosive and 1 coat of antifouling; rebush ladder drum, install new gear and make new shaft if necessary; repair broken casting on winding gear pedestals; install 2 new Globe valves on blow-down from boilers; install new water glass gauge cocks on both blowers; set up pump and overhaul suction line on same; install hangers on circulating pump line and fire lines; install new pins in cutter engine crank shaft; line up H. P. and L. P. engine and install new crosshead pins; manufacture new brass distance collar for cutter engine; connect up drain from capstan engine as per information to chief engineer; renew salt water line to main pump where necessary and renew salt water line from pump to cutter; repair lower fenders; fit patches; weld butt straps and bad order rivets; *No. 83*, dock and undock; stage and clean; scale bottom; paint bottom up to light load line; 2 coats of anticorrosive and 1 coat of antifouling; overhaul sea valves; test tanks and stop leaks; redrive or weld all loose rivets in hull, under water; repair lower fender irons, electric weld butt straps and bad order rivets in fender irons; steamship *Lady Sybil*, dock and undock; paint bottom and perform running repairs on main engine, feed pump, air pump, circulating pump, general service pump, forward fan engine, evaporator; calibrate gauges; repair whistle valve; install new fresh water hand pump and pipe; repairs to sanitary system in captain's and crew's quarters; test and repair boiler (4 furnaces), manufacture 2 coils for Dahl fuel oil heater, repairs to deck plates over end of hawse pipe; renew rungs and hand grabs in hold ladders, repair stanchions, rail, accommodation ladder, port lights, boatswain's lockers, sea valves, and miscellaneous light repairs; motor ship *Chiralite*, in addition to work reported on previous work report it has been found necessary to dock and undock, recopper and repair hull, repair sea valves, shaft logs, manufacture portable bulkheads between engine room and cargo holds, install manhole plate and fresh water tank, fair propeller blades, general repairs to main engine and clutch; install foundation plates for thrust blocks, manufacture and install 2 new thrust blocks, line up shafts; manufacture and install water jacketed exhaust pipes to stack; install new fresh water hand pump and repair cargo hand winch.

PREVIOUSLY REPORTED.

Launch *No. 405*, installation of new engine bed, repairs to rudder, rudder post, and renewal of defective copper; steamship *Panama*, reboiling and general repairs to machinery and hull.

The following vessels were at the Cristobal shops for repairs during the week ended December 12:

Steamship *La Navarre*, manufacture 65 valves; repair pump and steam pipes; U. S. S. *Nitro*, manufacture 1 pinion gear drive shaft; steamship *Achilles*, clean tubes; make 2 bearing caps for winch; renew 15 holding-down bolts on main engines; paint boot topping; overhaul speaking-tube system and engine room telegraph, etc.; barges *Nos. 20 and 49*, clean, scale, and paint, renew rivets where necessary and test tanks; steamships *Balboa*, repair valve spindle and clean boilers; *Cuba*, make tail rod for line pump and 1 disk for injector valve; *Jason*, repair air pump; U. S. D. B. launch *L-53*, open up engine and clutch for inspection and estimate; supply boat *No. 1*, install new cylinder; steamships *Venezuela*, free up anchor windlass; true up L. P. and H. P. slippers; fit liners on H. P. and L. P. crank brasses; *Panama*, *Jamaica*, *Zucapa*, *Katherine Parks* and barge *Mamei*, minor repairs.

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THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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The Panama Canal, Washington, D. C.

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at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., December 21, 1921. No. 19.

Flat Price Contracts for Work Performed by The Panama Canal.

The Panama Canal has adopted a policy of making flat price contracts for work performed by its departments and divisions, where practicable, in place of the former "cost plus" system. The practice applies both to work for the departments of the Government and to work for individuals and companies.

The practice of setting a price for a job and adhering to it was adopted for two principal reasons. One is that it should attain economy in the Canal organization. It will throw directly on the organization doing the work any loss from failure to perform efficiently, and hence increase the direct responsibility and active interest of all involved. The other is that for work performed for individuals and companies, especially steamship repairs and salvage work, it is frequently essential to quote an absolute and fixed price which will not be exceeded. In some cases the decision whether to have certain work performed rests on knowing accurately what it would cost, and in many others it avoids suspense and misunderstandings and irritation to be able to make a definite contract.

The official circular establishing the new practice is No. 642-5, dated November 26, 1921, and published in THE PANAMA CANAL RECORD of December 7. Costs will be estimated and charged as before, and for any interest that desires work to be done for a flat rate, about 10 per cent of the estimated cost is to be added to insure against loss. That is, it is supposed to insure against loss; but if it does not, the interest for which the work is being done will not bear the loss.

Supplement No. 7 to Tariff No. 5.—Coal.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., December 19, 1921.

ITEM 21.—COAL.

(Effective December 15, 1921.)

Cristobal-
Colon.

The following is added to paragraph 1:

The price of coal taken from the Cristobal coaling plant in over 1,000-ton lots, by vessels transiting the Canal, will be, per ton of 2,240 pounds.....

\$10.00

The following is added to paragraph 3:

If all, or any part, not less than 50 tons, of the more than 1,000-ton lots authorized to be sold at the coaling plant at \$10 per ton under paragraph 1 above, is delivered in lighters, the price of such coal delivered in lighters will be, per ton of 2,240 pounds.....

\$11.00

NOTE—For vessels transiting the Canal and taking between 833 and 1,000 tons of coal at Cristobal, the maximum charge will not exceed that for 1,000 tons at the rates prescribed in the two paragraphs above.

JAY J. MORROW,
Governor, The Panama Canal.
President, Panama Railroad Company.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, December 17, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.	
Calcutta	10	14	48	11	6	35	11	13	28	17	15	45	British	Imperial Oil Co.	480	60	18	0	Ballast	8,491 6,096
Alba	10	1	51	11	7	27	11	14	35	11	15	35	German	Roland Steamship Line.	360	51	20	5	General	4,791 3,392
Koki Maru	10	17	53	11	8	25	11	15	37	11	17	06	Japanese	Suzuki & Co.	388	53	0	25	Cement	7,083 5,812 4,003
Tsugaru	10	23	13	11	9	20	11	15	15	11	17	30	Swedish	Transatlantic Steamship Co.	425	56	0	26	Cotton, etc.	7,597 7,601 5,346
Have Maru	11	2	50	11	10	04	11	17	17	11	40	7	Japanese	Osaka Shosen Kaisha	407	50	1	25	General	6,648 6,234 4,495
No. 2	11	5	05	11	10	58	11	18	43	12	2	30	American	Barber Steamship Line (S. B.)	440	56	0	28	General case oil	10,242 9,815 6,100
Archer	11	10	06	11	11	41	11	19	52	11	21	08	British	Dollar Steamship Line	483	57	0	27	General	6,887 9,873 7,133
Esther Dollar.	11	14	15	12	6	40	12	15	13	12	16	25	British	C. T. Bowring & Co.	435	55	9	26	Fuel oil	9,300 7,496 5,311
Lompe	11	14	15	12	6	40	12	15	13	12	16	25	British	C. T. Bowring & Co.	435	55	9	26	Fuel oil	9,300 7,496 5,311
Anten	11	22	48	12	7	20	12	16	05	13	0	40	Swedish	Transatlantic Steamship Co.	420	54	0	29	Cotton, etc.	9,188 7,059 5,226
Florence Luck-	11	22	55	12	8	15	12	17	09	12	18	10	American	Luckenbach Line.	401	52	0	22	General	5,000 6,002 4,638
onbach	12	5	43	12	8	55	12	18	08	13	5	30	American	Dollar Line.	288	44	6	20	General	3,250 3,460 2,404
Stanley Dollar	8	18	35	12	8	43	12	18	13	12	19	20	British	Columbian Maritime Co.	190	29	1	10	General	84 741 350
Balboa	9	8	30	12	9	40	12	19	07	12	21	40	British	Pacific Steam Navigation Co.	220	34	0	12	General	318 1,187 622
Jamaica	6	19	15	12	11	03	12	19	13	12	23	35	Peruvian	Peruvian Line.	360	44	7	20	General	186 4,514 2,386
Hualala	8	19	15	12	11	03	12	20	35	12	21	50	British	Pacific Steam Navigation Co.	216	35	1	11	General	29 1,357 884
Manavi	12	2	32	12	12	00	12	20	35	12	21	50	British	Pacific Steam Navigation Co.	401	52	3	21	General	1,235 6,887 4,575
Victoria	13	16	35	13	7	38	13	14	04	14	18	01	American	Matson Navigation Co. (S. B.)	535	72	0	24	General	165 15,234 10,471
Hawkeye State	12	11	00	13	19	33	13	17	02	13	18	10	American	Williams Steamship Co.	386	52	2	27	General	4,800 5,846 4,112
Willpolo	12	11	00	13	19	33	13	17	02	13	18	10	American	Williams Steamship Co.	386	52	2	27	General	4,800 5,846 4,112
Daere Castle	13	1	07	13	11	45	13	19	15	13	20	40	British	James Chambers & Co.	412	52	0	25	General	7,100 5,846 4,112
Jason	12	6	50	13	12	19	13	20	07	16	0	45	Dutch	Royal Netherlands W. I. Mail	364	43	0	16	General	1,800 4,321 3,120
Santa Ana	13	12	22	14	6	20	14	13	19	15	16	48	American	W. R. Grace & Co.	362	51	6	22	General	1,737 5,776 4,081
Borgland	13	15	20	14	6	25	14	14	40	13	13	08	Norwegian	Peter Olsen & Co.	362	51	5	18	General	3,080 5,274 3,886
City of Tokyo	13	9	40	14	7	22	14	15	53	14	16	48	British	Ellerman Hall Line	442	59	0	20	General	9,200 9,055 6,933
Moerdijk	12	23	45	14	8	00	14	16	54	14	18	00	Dutch	Holland-American Line	472	61	1	24	General	5,663 9,165 6,911
Theodore	13	14	30	14	8	35	14	17	58	14	19	10	Norwegian	Fred Olsen & Co.	425	55	2	25	General	8,000 7,593 5,637
Roosevelt	13	14	30	14	9	34	14	19	11	14	20	00	Norwegian	N. Atl. & Western Co. (S. B.)	390	54	0	18	General	2,011 6,106 4,346
Lehigh	13	18	23	14	12	07	14	19	55	15	17	10	Swedish	Johnson Steamship Line	426	56	2	18	General	950 7,480 5,535
Balboa	13	18	23	14	12	07	14	19	55	15	17	10	Swedish	Johnson Steamship Line	426	56	2	18	General	950 7,480 5,535
Montgomery	14	12	38	14	12	53	14	21	10	14	22	30	American	United States Steel Products Co.	424	46	2	25	General cotton.	8,260 7,539 5,443
City	14	8	35	14	13	24	14	21	15	14	23	30	British	F. and W. Risson	400	51	2	19	General	3,320 5,176 3,587
Hazel Branch	13	15	59	14	7	50	14	15	10	16	7	53	American	United States Army	400	46	2	25	General	2,500 3,429 2,206
General Getty	8	17	48	15	6	19	15	14	16	16	7	53	American	Pacific Mail Steamship Co.	308	42	0	21	General	2,500 3,429 2,206
Cuba	8	17	48	15	6	19	15	14	16	16	7	53	American	Pacific Mail Steamship Co.	308	42	0	21	General	2,500 3,429 2,206
Hanna Nielsen	14	23	04	15	9	10	15	16	37	15	17	50	Norwegian	B. Stolt-Nielsen.	409	53	0	23	Coal	5,400 6,600 5,049
																			Motor ship.	
																			Mine planter.	

Motor ship.

Mine planter.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.									
10	4 07	16	6 20	16	17 11	16	18 05	American.	American-Hawian Line.
American.									
City of Edinburgh.	21 53	16	10 35	16	18 57	16	20 30	British.	Ellerman Lines, Ltd.
Kersforn.	7 58	16	11 45	16	20 18	16	21 35	Danish.	Rechnitzer Thomsen & Co.
Canadian.									
Victoria.	20 11	16	12 16	16	20 25	16	23 20	British.	Canadian Government.
Quilpe.	25 05	17	6 22	17	15 29	17	17 55	Panama.	Tomas Bracho.
Ebro.	16 17	17	10 56	17	18 31	17	20 05	British.	Pacific Steam Navigation Co.
Australien.	17 5 57	17	11 43	17	19 30	18	2 30	Danish.	Pacific Steam Navigation Co.
Garfield.	16 21 57	17	12 50	17	19 38	18	1 00	American.	East Asiatic Steamship Co.
									W. R. Grace & Co.
THROUGH THE CANAL—PACIFIC TO ATLANTIC.									
10	20	00	11	8 46	11	15 35	12	8 55	British.
Katherine Park.	11 30	11	8 46	11	15 38	11	16 57	Norwegian.	S. and J. Thompson
La Habra.	11 30	12	6 38	12	14 52	12	15 32	American.	W. Wilhelmson
Steel Voyager.	11 30	12	7 43	12	15 30	12	15 30	Swedish.	United States Steel Products Co.
Andalusia.	11 22	10	8 37	12	16 15	14	13 05	British.	Svenska Lloyd
Architect.	12 2 00	12	8 37	12	16 15	14	13 05	British.	T. and J. Harrison
Pilar de Lar-rinaga.	12 8 45	12	10 45	12	18 22	12	21 20	British.	Larrinaga & Co.
Baron Incheape.	13 0 30	13	5 23	13	17 12	13	18 45	British.	H. Hogarth & Sons
Ortega.	13 19 15	14	6 53	14	16 37	14	20 06	British.	Pacific Steam Navigation Co.
Essequibo.	14 6 30	14	8 49	14	16 58	15	12 08	British.	Pacific Steam Navigation Co.
Selanda.	14 17 45	15	7 34	15	15 02	15	17 20	Danish.	East Asiatic Co.
Henderson.	14 5 00	15	7 42	15	15 32	15	17 22	American.	United States Navy
Robin Good-fellow.	14 19 30	15	8 53	15	17 07	15	17 20	American.	The Robin Line Steamship Co.
Quilota.	14 22 30	15	10 51	15	18 23	16	15 03	British.	Pacific Steam Navigation Co.
Winsum.	15 12 40	15	13 15	15	21 05	15	21 05	Dutch.	Vink & Co.
Barge No. 67.	15 14 50	16	18 40	16	3 04	American.			Panama Manganesee Co.
Litchfield.	12 12 00	16	6 39	16	15 27	16	17 43	American.	United States Navy
Coghlan.	12 12 00	16	6 46	16	15 25	16	17 43	American.	United States Navy
Preston.	12 12 00	16	6 57	16	15 31	16	17 43	American.	United States Navy
Lamson.	12 12 00	16	7 39	16	15 55	16	17 43	American.	United States Navy
Brace.	12 12 00	16	7 52	16	16 00	16	17 43	American.	United States Navy
Edsall.	12 12 00	16	8 10	16	16 10	16	17 43	American.	United States Navy
MacLeish.	12 12 00	16	8 13	16	17 15	16	17 43	American.	United States Navy
Bulmer.	12 12 00	16	8 26	16	17 20	16	17 43	American.	United States Navy
McCormick.	12 12 00	16	8 47	16	17 27	16	17 43	American.	United States Navy
Parrott.	12 12 00	16	8 51	16	17 40	16	17 43	American.	United States Navy
Simpson.	12 12 00	16	9 13	16	17 43	16	17 43	American.	United States Navy
A. L. Kent.	15 23 30	16	11 37	16	19 05	16	19 05	American.	Crowell & Thurlow
Renaco.	16 1 30	16	11 43	16	20 53	17	11 12	Chilean.	Gullean Line
Osage.	16 1 30	16	13 55	16	22 57	17	2 03	American.	Moore & McCormack Co. (S. B.)
Willilo.	16 22 00	17	7 41	17	15 15	17	15 29	American.	Williams Steamship Co.
Taiui.	17 1 30	17	9 05	17	16 25	18	8 20	British.	Shaw, Saville & Albion Co.
Murla.	17 3 00	17	9 38	17	17 45	17	23 30	German.	Roland Line
Honolulu Maru.	17 10 30	17	11 11	17	18 40	17	20 10	Japanese.	Osaka Shosen Kaisha
K. R. Kingsley.	17 6 45	17	12 16	17	19 55	17	19 55	American.	Standard Oil Co.

* Transport.

* Destroyer.

* For orders.

* Box shoeks and general.

* Box shoeks and general.

MOVEMENTS OF OCEAN VESSELS—Continued.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.		
Date.	Vessel.	Line.	From—	Date.	Vessel.	For—
Dec. 11.	Coppename	United Fruit Co.	New Orleans via Habana.	Dec. 11.	Coppename	Bocas del Toro.
Dec. 12.	Venezuela	Royal Netherlands W. I. Mail	Port Limon.	Dec. 11.	William Green.	Mata Redondo.
Dec. 12.	Zacapa	United Fruit Co.	New Orleans.	Dec. 12.	Achilles ^a	Norfolk.
Dec. 13.	Calmar	United Fruit Co.	New York via Habana.	Dec. 13.	Venezuela	Puerto Colombia.
Dec. 13.	Caribbean	Panama Railroad Steamship Line.	Cartagena.	Dec. 14.	Calmar	New York via Port Limon and Habana.
Dec. 14.	Coppename	United Fruit Co.	Bocas del Toro.	Dec. 14.	Coppename	New Orleans.
Dec. 14.	Trives	United Fruit Co.	New York via Kingston.	Dec. 15.	Zacapa	New Orleans via Bocas del Toro and Habana.
Dec. 14.	Turrialba	United Fruit Co.	New York via Kingston and Colombia.	Dec. 15.	Turrialba	New York via Kingston.
Dec. 14.	Corbis	Anglo-Saxon Petroleum Co.	Curacao.	Dec. 15.	Trives	Colombian ports.
Dec. 15.	Camden	United Fruit Co.	Tampico.	Dec. 15.	Colon	New York via Haiti.
Dec. 17.	Allanca	Panama Railroad Steamship Line.	New York via Haiti.	Dec. 16.	Caribbean	Puerto Colombia.
Dec. 17.	Selandia	East Asiatic Steamship Co.	High seas.	Dec. 16.	Corbis	Tampico.
Dec. 17.	Quibdo	A. and T. Meluk	Cartagena.	Dec. 17.	Selandia ^a	Liverpool.

^a Collier.

PORT OF BALBOA.

Dec. 14.	Asheville	United States Navy.	Corinto.
Dec. 14.	Galveston	United States Navy.	Corinto.
Dec. 15.	Lady Sybil	International Petroleum Co.	Talara.

* Other than ships passing through the Canal.

First Steamer in New French Line Service.

The steamship *Honduras*, the vessel finally selected to inaugurate the new service of the Compagnie Generale Transatlantique between Europe and the west coast of North America, an announcement of which was published in THE PANAMA CANAL RECORD of September 21, passed through the Canal northbound on December 18 with a cargo of canned fish, dried fruit, barley, copper, and other Pacific coast products loaded at Puget Sound ports and San Francisco for discharge at Bordeaux, Havre, Antwerp, and Hamburg. The *Honduras* will be followed by the steamships *Mississippi* and *St. Joseph*. A monthly service will be maintained.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution to shipping of such notices and circulars. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended December 17:

Steamship *Hawkeye State*, repair port after blower; renew brickwork, No. 6 furnace; manufacture 1 bevel pinion for revolution counter and repair 1 recording pen; barges *No. 102*, dock and undock; stage and clean; scale bottom up to lower fender; paint 2 coats of anticorrosive and 1 coat of antifouling; *No. 121*, dock and undock; stage and clean; scale bottom up to lower fender; paint 2 coats of anticorrosive and 1 coat of antifouling; dredge *No. 86*, dock and undock; stage and clean; scale bottom up to 8-foot draft line; redrive or weld all loose rivets in hull under water line, and stop all leaks; overhaul sea valves; scale, paint, and tighten all loose rivets in ladder; install valve in suction line; scow *No. 139*, redrive or weld all loose rivets in hull below water line; test tanks; calk as required and stop all leaks; renew 80 feet of side fender; patch bottom; straighten combing; manufacture and install end and rake fenders.

PREVIOUSLY REPORTED.

Steamships *Lady Sybil*, heavy operation and miscellaneous hull repairs; *Calgarolite*, heavy operation and miscellaneous repairs; motor ship *Chiralite*, heavy operation and miscellaneous repairs; launch *No. 405*, installation of new engine bed and light repairs.

The following vessels were at the Cristobal shops for repairs during the week ended December 19:

Steamship *Colon*, repair double bottom tank; install guard for lifeboat; repair steam pipes; D. B. launch *L-53*, repair bulwarks, rudder head, shoe, lower fender, etc.; install copper patches on hull; overhaul reverse gear; true up pistons; manufacture new ring; overhaul magneto; overhaul air and bilge pump; test and repair tank, etc.; U. S. N. barge *No. 479*, dock and undock; scrape and paint bottom; test tanks; renew rivets where necessary; scrape and red lead tanks, etc.; steamships *Canadian Cruiser*, machine piston head, rod, and rings; *Allianca*, repair drain pipe in hold, repair scupper under bridge; tug *Engineer*, scale boilers; remetal H. P. crank brass; fit brasses to L. P. link block, etc.; steamships *Arawa*, *Caribbean*, and launch *Wilhelm*, minor repairs.

PREVIOUSLY REPORTED.

Supply boat *No. 1*, install new cylinder; steamship *Venezuela*, free up anchor windlass; true up L. P. and H. P. slippers; fit liners on H. P. and L. P. crank brasses, etc.

Trips Through the Canal.

In addition to the steamship services carrying local passengers through the Canal from one terminal to the other which were named in THE PANAMA CANAL RECORD of December 7, the Matson Line, operating the steamers *Buckeye State* and *Hawkeye State*, accepts such passengers at \$6 each for the trip.

With this addition, the lines now offering such service are the Pacific Steam Navigation Company, Grace Line, South American Steamship Company, Pacific Mail Steamship Company, and Matson Line. The two last named charge \$6 for the trip, the others \$10. Together they afford about 5 transits of the Canal each way every week.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending December 17, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Coppename.	United Fruit Co.	December 11.	December 11.	(^a)	47
Huallaga.	Peruvian Line.	December 11.	December 12.		192
Balboa.	Caribbean Steamship Line.	December 11.	December 12.		101
Manavi.	Pacific Steam Navigation Co.	December 11.	December 12.		20
Jamaica.	Pacific Steam Navigation Co.	December 11.	December 12.		58
Victoria.	Pacific Steam Navigation Co.	December 12.	December 12.	(^a)	4
Jason.	Royal Netherlands W. I. Mail.	December 12.	December 13.	676	44½
Venezuela.	Royal Netherlands W. I. Mail.	December 12.	December 14.	1	722
Moerdijk.	Holland-American Line.	December 12.	December 14.	197	½
Architect.	Harrison Line.	December 12.	December 14.	(^a)	648
Zacapa.	United Fruit Co.	December 12.	December 15.	735	219
Balboa.	Johnson Steamship Line.	December 13.	December 14.	37	(^a)
Calamares.	United Fruit Co.	December 13.	December 14.	371	123
Caribbean.	Panama Railroad Steamship Line.	December 13.	December 16.	750	126
Coppename.	United Fruit Co.	December 14.	December 14.	(^a)	2
Tivives.	United Fruit Co.	December 14.	December 15.	34	191
Turrialba.	United Fruit Co.	December 14.	December 15.	(^a)	1
Essequibo.	Pacific Steam Navigation Co.	December 14.	December 14.	3	62
Cuba.	Pacific Mail Steamship Co.	December 14.	December 15.		2,661
Colon.	Panama Railroad Steamship Line.	December 14.	December 15.		2,874
Corbis.	Anglo-American Petroleum Co.	December 14.	December 16.	7,667	(^a)
Quillota.	Pacific Steam Navigation Co.	December 15.	December 16.	426	(^a)
Quilpue.	Pacific Steam Navigation Co.	December 15.	December 17.	89	161
Ebro.	Pacific Steam Navigation Co.	December 16.	December 17.	65	97
Renaico.	Chilean Line.	December 16.	December 17.	86	(^a)
Camden.	United Fruit Co.	December 16.	December 17.	8,957	
Allianca.	Panama Railroad Steamship Line.	December 17.	December 17.	1,418	
Australien.	East Asiatic Steamship Co.	December 17.	December 17.	28	(^a)

^a Motor ship.^a No cargo discharged.^a No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending December 17, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Venezuela.	Pacific Mail Steamship Co.	December 11.	December 11.		5
Jamaica.	Pacific Steam Navigation Co.	December 12.	December 12.		8
Huallaga.	Peruvian Steamship Line.	December 12.	December 12.		5
Jason.	Royal Netherlands W. I. Mail.	December 13.	December 16.	502	
Cuba.	Pacific Mail Steamship Co.	December 14.	December 16.		175
Borgland.	Peter Olsen.	December 14.	December 14.	443	21
Balboa.	Johnson Line.	December 14.	December 14.	149	
Quillota.	Pacific Steam Navigation Co.	December 15.	December 15.	5	
Quilpue.	Pacific Steam Navigation Co.	December 17.	December 17.		5

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Change in Passenger Train Schedule on Panama Railroad.

Effective January 1, 1922, the passenger train schedule of the Panama Railroad will be changed. The present schedule has a train leaving each terminal, Colon and Panama, at 7.10 a. m., 11 a. m., and 5 p. m., the trains passing near Darien. Under the new schedule a regular passenger train will leave Panama at 7 a. m., arriving at Colon at 8.45 a. m. and 25 minutes later the same equipment will leave for Panama in charge of the same crew. In the afternoon a train will leave Colon at 4 o'clock, arriving at Panama at 5.45 p. m.; it will leave Panama for Colon at 6.10 p. m. and reach Colon at 7.55 p. m.

The service of these two regular passenger trains will be supplemented by accommodation trains crossing the Isthmus in the early afternoon. Trains made up of through freight will leave each terminal station at 12.15 p. m., carrying baggage and passenger cars, and arriving at the opposite terminal at 2.10 p. m. The accommodation trains will make all stops for passengers but will not handle freight at way stations.

The combined schedule will give 3 trains daily for passengers in both directions. Trains will leave Colon at 9.10 a. m., 12.15 p. m., and 4 p. m., and will leave Panama at 7 a. m., 12.15 p. m., and 6.10 p. m.

Executive Order.—Conditions of Employment.¹

By virtue of the authority vested in me, it is hereby ordered:

1. Pursuant to the provisions contained in paragraph 17 of the Executive Order of February 2, 1914,² fixing conditions of employment governing employees of The Panama Canal and Panama Railroad Company on the Isthmus of Panama, a charge will be made for rent, fuel, electric current, water, and services in connection with quarters, on and after January 1, 1922.

RENT.

2. The rental will be based on the present average depreciated value of the area occupied by the tenant, to be determined by the Governor of The Panama Canal. The rental will be sufficient to amortize the investment in quarters on the basis of a total average life of 36 years, to return five (5) per cent, for amortization and interest on the investment, and in addition cover the amount fixed for expenditure for repairs due to ordinary wear and tear of buildings and for the disposal of garbage and other services necessary from a sanitary point of view. The rental for bachelor quarters and for nonhousekeeping married quarters may be fixed to include all miscellaneous services which are rendered. The rental of buildings hereafter erected shall be fixed so as to conform with rentals theretofore charged for similar buildings.

3. Charges for fuel, electric current, and water will be based upon cost; where meters are not installed, the charge for water will be based upon the average consumption, and the charge for current upon the number of lamps or other devices installed.

4. Miscellaneous work, such as repainting interior of houses, repairing electric fixtures, breakage in screens, furniture and stoves, plumbing, etc., and the cutting of grass and trimming of hedges around quarters, will be done upon request of tenants and charges for such services will be made on the basis of cost. Any repairs made necessary by reason of a tenant's misuse of the premises or any property therein, will be made by The Panama Canal and the cost therefor collected from such tenant.

5. The Governor of The Panama Canal is charged with the duty of issuing such instructions as may be necessary to carry out this order and to fix charges as herein outlined, subject to the general instructions provided.

WARREN G. HARDING.

THE WHITE HOUSE,
December 3, 1921.

¹ Published as Panama Canal Circular No. 601-127.

² Published as Panama Canal Circular No. 601-4.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Charles Chase	32636	Barbados	Colon	Panama Railroad	November 3, 1921.
Samuel Collins	31874	Jamaica	Colon	R. and F. Agent	November 24, 1921.
Pedro Nieto	20717	Spain	Panama	Mun. Eng. Div.	November 23, 1921.
Daniel Phillips	25202	Jamaica	Colon	R. and F. Agent	November 3, 1921.
Zebulum Yates	44427	Jamaica	Colon	Panama Railroad	November 8, 1921.
Henry Spencer	50573	Barbados	Panama	Dredging Division	October 30, 1921.
James Maloney	42195	Barbados	La Boca	Motor car house	December 4, 1921.

Official Circulars.

Reduced Rate on Grace Line's Vessels.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., December 1, 1921.

To all concerned—The Panama Agencies Company advises that, effective November 29, 1921, a reduction of 25 per cent from the minimum first-class fare on the vessels of the Grace Line in the New York-Cristobal service will be granted employees of The Panama Canal and the Panama Railroad Company and dependent members of their families. The vessels of their line in this service are the *Santa Elisa*, *Santa Teresa*, *Santa Luisa*, and *Santa Ana*.

C. A. McILVAINE,
Executive Secretary.

Land for Agricultural Purposes.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., December 2, 1921.

CIRCULAR NO. 713-1:

1. Pursuant to instructions contained in letter of the Secretary of War to the Governor under date of October 18, 1921, certain lands in the Canal Zone are from this date made available for agricultural purposes.

2. The lands so made available are comprised within the following-described areas, but lands within 1 mile of the towns of Corozal, Pedro Miguel, Paraiso, Gatun, Empire, and Culebra, are excepted:

(a) *East side of the Canal*—The area bounded by the Curundú River on the south, Gatun River on the north, Zone line on the east, and the Canal on the west, except the areas included in military reservations, pasture lands, Summit contract, Las Cascadas Plantation, Juan Mina Plantation, and such land as is needed by the Police Division at Gamboa, and such areas as have been assigned by the Supply Department for garden plots.

(b) *West side of the Canal*—The area bounded by Venado Beach on the south, Supply Department pastures on the north, Zone line on the west, Supply Department pastures on the east; and the area bounded by pastures on the south, military reservation and Limon Bay on the north, the Canal and pasture area on the east, and Zone line on the west; except that no land will be assigned within $\frac{1}{2}$ mile of Gatun Dam or within $\frac{1}{2}$ mile of Caño Saddle; this latter exception not including the islands in Gatun Lake.

3. These lands will be assigned under revocable licenses, subject to the following provisions:

(a) If at any time it shall become necessary for the United States to occupy or use the whole or any portion of the lands covered by any such revocable license, it shall have the right to do so without further compensation to the licensee

than the reasonable value of the improvements made by him upon said tract, said value to be determined in such manner as the Governor may direct.

(b) No license shall be granted to any person who shall not have first established by affidavit that he will use the same for agricultural purposes and that he will comply with all regulations now or hereafter in effect concerning land in the Canal Zone devoted to agriculture.

(c) The licensee shall be required to enter upon the land and commence the cultivation thereof within 6 months from the date of his license, and thereafter to cultivate the land to the satisfaction of the duly appointed representative of the Canal entrusted by the Governor with the supervision of such matters.

(d) No license shall be assignable except with the approval of the Governor.

(e) All licenses shall reserve to the United States all mineral, oil, and gas rights in the lands covered by them.

(f) Under this authority not exceeding 5 hectares will be granted to any one person, a member of whose immediate family has not received a similar grant, without any charge being made therefor up to and including June 30, 1924. An applicant may be permitted to take under license not to exceed 50 hectares, but in such event he shall be charged at the rate of \$5 per annum for each hectare in excess of 5 so taken. On and after July 1, 1924, all land held under license as herein provided shall be charged for at the rate of \$5 per hectare per annum, and this rate shall not be increased prior to December 31, 1930."

4. From second-hand material soon to be available from buildings razed there will be granted to each licensee without charge until the available supply is exhausted not to exceed 50 sheets of iron and 5,000 feet of lumber, and this material will be transported to the point on the railroad nearest the respective holdings at the expense of the Panama Railroad Company; but no licensee of more than five hectares of land shall be given any material as herein provided until all requisitions from holders of five-hectare assignments have been satisfied.

5. The receipt and acceptance or rejection of applications, the delimiting of land assigned, the necessary inspections, and all other matters concerning the operation of this plan, shall be under the jurisdiction of the Land Agent.

JAY J. MORROW,
Governor.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

JAN 16 1922

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OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Volume XV. Balboa Heights, C. Z., December 28, 1921. No. 20.

Good Wishes of the Season.

THE PANAMA CANAL,
BALBOA HEIGHTS, C. Z., December 23, 1921.

The Panama Canal extends to all of its patrons and employees the greetings of the holidays.

In the past year there has been a slight decrease in traffic, but the volume has been well sustained in view of the general depression. Sales of supplies to ships, and repair work, have fallen off on account of lessened traffic and policies of retrenchment on the part of ship operators.

The Canal force has been greatly reduced, due to these causes, completion of construction, and revisions in method and organization. Wages have been reduced in step with reductions in the United States and, in the case of silver employees, with lowered cost of living. Beginning with the new year, free quarters for gold roll employees will be eliminated. Flat price contracts are now being entered into for work done by departments of the Canal, eliminating the uncertainties of the former "cost plus" system. These changes are all parts of a policy of placing the operation of the Canal on a business basis, with what appears to be a due regard to conditions of service in the tropics.

The levying of rent and accompanying charges on gold employees has met with opposition on their part. It is the belief of the administration that these charges are proper, but it can have no objection to full discussion of this or any situation affecting employees, or to legitimate appeals to the authorities to which we are responsible. The Governor takes occasion to express appreciation of the fair and open manner in which employees have asserted their case.

The elimination of perquisites is primarily for economy. It is, however, aimed also at establishing direct cash payment for services and eliminating indirect part-payment through privileges. It makes costs tangible and businesslike and places a direct gauge on compensation for services. Throughout, the commercialization of the Canal should place a more direct emphasis on service and tend to secure corresponding payment.

It is in the belief that we may all look forward to better days and bigger work that the administration extends cordial holiday greetings.

JAY J. MORROW,
Governor.

Lower Rates on Coconuts and Ivory Nuts to New York.

The Panama Railroad Steamship Line has made reductions in rates from Colon or Cristobal to New York for shipment of two important products of Panama, effective December 15, 1921. The rate on coconuts was reduced from 30 to 25 cents per 100 pounds and that on ivory nuts from 30 to 20 cents per 100 pounds.

CANAL WORK IN NOVEMBER.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of November, 1921:

BALBOA HEIGHTS, C. Z., December 20, 1921.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of November, 1921.

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal, as compared with the preceding month and with the corresponding month of last year, was as follows:

	November, 1921.	October, 1921.	November, 1920.
Commercial vessels.....	222	255	238
Noncommercial vessels.....	13	20	16
Launches, etc. (under 10 tons).....	4	6	4
Total vessels and craft through the Canal.....	239	281	258

COMMERCIAL TRAFFIC.¹

Tolls.

Under the present dual method of assessing tolls, the revenue from this source was \$923,048.70. Had the net tonnage as determined by the Panama Canal rules of measurement been used in all cases as a basis for collecting tolls, the above amount would have been increased by \$185,863.60. This additional revenue would have been contributed by nationality of ships, as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$34,586.05	\$23,842.75	\$58,428.80
Chilean.....	2,257.10	1,263.65	3,520.75
Danish.....	2,324.65	2,275.50	4,600.15
Dutch.....	1,371.80	5,407.00	6,778.80
French.....	1,155.70	460.45	1,616.15
German.....	1,120.75	1,280.05	2,400.80
Greek.....		1,243.40	1,243.40
Italian.....	447.55	1,548.70	1,996.25
Japanese.....	2,486.23	2,729.90	5,216.13
Norwegian.....	3,449.65	3,210.00	6,659.65
Peruvian.....	3,315.75	3,315.75	6,631.50
Spanish.....		1,051.10	1,051.10
Swedish.....	1,958.10	3,305.45	5,263.55
United States.....	45,857.90	32,143.95	78,001.85
Total.....	\$100,331.23	83,077.65	183,408.88

The additional tolls paid by American vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	25,221.75	17,245.50	42,467.25
United States and Canal Zone ports.....	774.70	528.10	1,302.80
United States and possessions.....	2,225.10	2,042.70	4,267.80
United States and foreign ports.....	15,039.90	12,327.65	27,367.55
Between foreign ports.....	2,596.45		2,596.45
Totals.....	45,857.90	32,143.95	78,001.85

Of the above additional revenue that would have been collected by using the Panama Canal rules exclusively, \$4,624.80 represents the additional tolls that would have been collected on account of deck cargo.

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial."

COMPARATIVE TRAFFIC STATISTICS.

The following tabulations permit a ready comparison of commercial traffic through the Canal in November, 1921, with that of the preceding months, along the lines indicated at the head of the various tables.

TONNAGE, TOLLS, AND CARGO CARRIED.

	November, 1921.	October, 1921.	November, 1920.	Average month for past year.
United States equivalent net tonnage.....	753,697	866,196	765,817	775,729
Panama Canal net tonnage.....	942,411	1,069,554	929,875	953,874
Registered gross tonnage.....	1,184,157	1,335,812	1,184,072	1,205,516
Registered net tonnage.....	752,886	863,676	756,223	760,737
Tolls.....	\$923,048.70	\$1,047,935.62	\$933,912.11	\$938,862.50
Tons of cargo carried.....	855,440	985,775	984,910	902,541

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.10	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,129	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	64,769.85	70,058	23	96,877	93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,908
May.....	9	39,614	40,180.00	43,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,593	14	61,980	62,318.75	79,129
November.....	12	74,635	71,525.74	44,976	5	29,949	29,127.50	28,865

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED PER VESSEL.

	November, 1921.	October, 1921.	November, 1920.
United States equivalent net tonnage.....	3,395	3,397	3,218
Panama Canal net tonnage.....	4,245	4,194	3,907
Registered gross tonnage.....	5,334	5,238	4,975
Registered net tonnage.....	3,391	3,387	3,177
Tolls.....	\$4,157.88	\$4,109.55	\$3,924.00
Tons of cargo (all vessels).....	3,853	3,866	4,138
Tons of cargo (laden vessels only).....	4,322	4,694	4,804

COMMODITY STATISTICS.

A classification of the cargo passing through the Canal during the month of November, 1921, has been compiled from declarations of cargo submitted by the ships' masters, and while incomplete, is indicative of the kind and quantity of the various commodities carried by ships transiting the Canal. From the cargo declarations and manifests submitted, it was possible to classify by commodities 75 per cent of all cargo passing from the Atlantic to the Pacific, and 94½ per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith:

Commodity.	November, 1921.	October, 1921.	September, 1921.	August, 1921.
Atlantic to Pacific.				
Oil:				
Crude.....	30,144	68,891	17,981	36,454
Refined.....	47,944	25,840	19,781	28,685
Other.....	3,113	1,121	2,088	2,177
Manufactured goods:				
Iron and steel.....	65,071	48,074	50,488	28,373
Machinery, railroad material, and textiles.....	23,927	14,659	19,331	8,312
Coal and coke.....	52,850	21,512	16,040	24,066
Cotton, raw.....	20,807	14,725	19,207	34,482
Metals.....	10,052	8,880	8,467	5,286
Ammonia.....	7,447	12,072	4,749	6,997
Cement.....	5,233	2,681	1,834	3,511
Paper.....	2,900	2,813	1,210	1,508
Sulphur.....	2,500		11,551	19,350
Tobacco.....	2,075	2,879	2,452	893
Other and general.....	112,618	150,290	125,541	117,936
Total cargo.....	386,681	374,437	300,720	317,970
Pacific to Atlantic.				
Wheat.....	110,831	128,375	75,486	80,231
Lumber.....	50,564	56,606	26,750	35,054
Nitrate.....	39,523	54,256	22,758	39,349
Barley.....	37,989	67,092	107,831	77,661
Oils:				
Crude.....	26,617	670	4,820	570
Refined.....	10,169	9,713	18,278	
Vegetable, etc.....	761	1,581	1,545	2,361
Canned goods:				
Fish.....	13,767	32,761	17,232	7,972
Fruit.....	19,808	25,547	35,427	10,921
Vegetables, milk, etc.....	1,470	2,523	4,302	2,875
Metals, various.....	14,515	11,078	10,516	21,425
Ores, various.....	13,218	3,824	6,433	6,524
Fruit, fresh and dried.....	13,060	4,162	6,664	5,192
Sugar.....	11,210	20,261	6,657	49,406
Beans, peas, lentils, etc.....	9,270	20,547	6,774	5,571
Flour.....	8,799	19,000	15,101	18,946
Phosphates.....	7,300	14,057		6,650
Cold storage, meats, butter, etc.....	4,920	18,739	10,600	31,658
Cotton.....	4,886	12,592	5,392	4,140
Rice.....	4,678	4,054	7,205	5,033
Wool.....	4,349	9,081	5,522	10,468
Coffee.....	3,785	4,594	6,013	6,710
Ivory nuts.....	3,012	2,811	3,164	1,492
Cacao.....	2,862	3,844	4,327	1,469
Tea.....	1,983	3,950	546	444
Other and general.....	49,413	79,620	44,831	89,181
Total cargo.....	468,759	611,338	454,174	521,303

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space, yet the rate of such tolls per cargo ton varies in different ships as the ratio of cargo tonnage varies to the net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of November, 1921, grouping the ships by nationality.

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.23	\$0.90	\$1.19
Chilean.....	3.43	15.11	4.69
Danish.....	.51	.45	.47
Dutch.....	2.55	.66	.91
French.....	20.96	.74	2.65
German.....	1.30	.49	.84
Greek.....		.64	.64
Italian.....	7.39	.94	1.31
Japanese.....	.83	.75	.78
Norwegian.....	.84	.58	.76
Peruvian.....	1.40	.86	1.14
Spanish.....		.58	.58
Swedish.....	1.63	.56	.68
United States.....	1.18	.86	1.02
Average rate, all ships, November, 1921.....	1.19	.81	.98
Average rate, all ships, October, 1921.....	1.09	.78	.90
Average rate, all ships, September, 1921.....	1.23	.77	.95

ORIGIN AND DESTINATION OF TONNAGE.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past 12 months, the figures representing the Panama Canal net tonnage:

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscellaneous.	Total.
November, 1920.....	275,829	104,856	43,350	20,399	23,517	467,951
December.....	332,418	128,739	53,070	36,097	4,608	554,932
January, 1921.....	284,111	129,939	60,564	21,373	21,732	517,719
February.....	268,727	75,532	55,859	18,844	16,271	435,233
March.....	291,937	188,548	85,275	20,731	27,100	613,591
April.....	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
Average month.....	271,305	133,249	41,212	22,916	20,617	489,299

DESTINATION OF ALL TONNAGE FROM ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
November, 1920.....	142,693	160,404	43,431	100,879	20,544	467,951
December.....	91,963	248,176	99,594	84,168	31,031	554,932
January, 1921.....	163,295	170,861	56,082	94,583	32,898	517,719
February.....	119,271	168,904	66,958	62,507	17,593	435,233
March.....	139,889	146,075	118,053	153,910	55,664	613,591
April.....	141,584	135,622	131,637	64,155	19,508	492,506
May.....	125,091	103,143	82,499	82,582	21,114	414,429
June.....	143,217	106,369	83,063	46,298	36,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,486	70,551	50,719	487,219
September.....	268,758	90,105	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
Average month.....	159,241	132,472	84,603	79,125	33,858	489,299

ORIGIN OF ALL TONNAGE FROM PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Australasia.	Far East.	Miscellaneous.	Total.
November, 1920.....	152,620	193,348	67,251	32,687	16,018	461,924
December.....	145,192	239,389	58,175	11,146	19,084	472,986
January, 1921.....	151,034	230,437	115,206	26,843	53,084	576,604
February.....	173,815	226,242	34,616	22,473	24,459	481,605
March.....	163,294	203,002	62,652	28,525	41,754	499,227
April.....	139,495	168,585	86,560	29,756	38,601	462,997
May.....	174,128	137,253	81,086	12,407	45,309	450,188
June.....	116,521	112,474	75,400	18,740	23,040	346,175
July.....	174,412	99,745	70,124	41,084	22,197	407,562
August.....	229,629	110,248	68,661	20,628	48,894	478,057
September.....	218,453	84,212	30,814	14,762	46,262	394,503
October.....	252,645	124,560	41,436	37,720	42,018	498,379
November.....	189,942	126,381	6,581	23,556	56,934	403,394
Average month.....	169,044	160,944	63,094	23,551	36,303	452,936

DESTINATION OF ALL TONNAGE FROM PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
November, 1920.....	209,701	160,628	49,066	23,801	18,728	461,924
December.....	198,618	157,070	69,008	34,099	14,191	472,986
January, 1921.....	293,836	188,133	49,947	23,295	21,393	576,604
February.....	175,324	163,690	74,363	18,056	50,174	481,605

DESTINATION OF ALL TONNAGE FROM PACIFIC TO ATLANTIC—continued.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
March.....	190,683	189,793	83,700	21,228	13,823	499,227
April.....	189,209	197,311	53,334	22,043	1,100	462,997
May.....	201,548	140,940	73,705	21,549	12,446	450,188
June.....	155,147	136,292	18,324	26,112	10,300	346,175
July.....	205,690	134,047	23,123	28,770	15,932	407,562
August.....	231,830	194,279	27,256	22,022	2,670	478,057
September.....	204,820	140,555	26,478	17,114	5,536	394,503
October.....	259,613	170,189	18,222	30,955	19,400	498,379
November.....	196,974	164,345	20,446	16,760	4,869	403,394
Average month.....	204,448	163,924	47,396	22,904	14,264	452,936

In connection with the above tabulations, the following statement shows the percentage of increase or decrease for November of tonnage (Panama Canal net) to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year.

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe.....		3.6	44.5	
East coast of United States.....	0.2		11.2	
East coast of Mexico.....		56.8		63.6
Cristobal, C. Z.....		26.8		19.5
West coast of United States.....	35.7		12.3	
West coast of South America.....		18.7		21.5
Australasia.....		0.8		89.2
Far East.....	12.5			0.1

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for November, 1921, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of December 7, 1921. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes for the month of November, 1921, for the preceding month and for the corresponding month of last year:

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	November, 1921.	October, 1921.	November, 1920.	November, 1921.	October, 1921.	November, 1920.
	Number of vessels.			Number of vessels.		
United States coastwise.....	24	22	19	17	19	10
United States and Far East.....	17	19	8	4	4	7
Europe and United States.....	13	27	5	21	29	14
United States and South America.....	12	10	24	11	12	20
Europe and South America.....	11	8	13	13	12	18
Cristobal and South America.....	10	11	11	10	12	11
Europe and Australasia.....	8	8	3	1	6	6
United States and Australasia.....	5	4	14		1	2
Europe and Canada.....	5	3	1	7	5	3
Mexico and United States.....	2	1	2		2	3
Mexico and South America.....	1	1	6	4	2	7
Miscellaneous routings.....	15	17	17	11	20	14
Totals.....	123	131	123	99	124	115
	Panama Canal net tonnage.			Panama Canal net tonnage.		
United States coastwise.....	136,349	113,712	69,247	86,958	96,731	38,708
United States and Far East.....	91,115	93,947	38,558	19,159	19,465	30,892
Europe and United States.....	57,229	135,184	26,401	96,647	125,113	76,405
United States and South America.....	40,368	27,034	80,685	41,217	36,182	74,489
Europe and South America.....	42,473	28,832	45,500	51,947	53,704	66,925
Cristobal and South America.....	13,111	16,733	15,646	12,149	18,077	16,007
Europe and Australasia.....	58,006	46,421	22,277	6,581	36,498	52,507
United States and Australasia.....	20,487	17,558	73,306		4,938	14,744
Europe and Canada.....	28,102	15,994	4,008	37,402	26,043	13,864

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	November, 1921.	October, 1921.	November, 1920.	November, 1921.	October, 1921.	November, 1920.
	Panama Canal net tonnage.			Panama Canal net tonnage.		
Mexico and United States.....	9,946	1,121	11,449	.....	6,407	13,139
Mexico and South America.....	5,051	5,311	31,901	20,446	9,719	35,927
Miscellaneous routings.....	36,780	69,328	48,973	30,888	65,502	28,317
Totals.....	539,017	571,175	467,951	403,394	498,379	461,924
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise.....	91,067	86,442	51,454	101,460	105,951	41,269
United States and Far East.....	116,028	123,689	51,810	23,080	27,918	37,864
Europe and United States.....	17,313	10,891	2,500	151,491	209,788	112,307
United States and South America.....	14,878	10,398	101,479	44,225	31,664	97,363
Europe and South America.....	19,473	13,332	36,552	68,994	67,808	86,434
Cristobal and South America.....	2,269	2,309	4,529	6,927	11,107	11,867
Europe and Australasia.....	48,400	35,426	27,244	5,775	33,305	38,391
United States and Australasia.....	21,659	16,432	101,424	.....	3,300	10,473
Europe and Canada.....	6,611	11,114	368	41,171	39,985	20,474
Mexico and United States.....	20,300	.....	20,000	.....	3,233	.....
Mexico and South America.....	9,000	9,500	53,200	.....	.....	.....
Miscellaneous routings.....	19,683	54,904	40,549	25,636	77,279	37,359
Totals.....	386,681	374,437	491,109	468,759	611,338	493,801

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships and other noncargo-carrying vessels, are shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	6	28,037	\$24,489.47	1	5,311	\$3,823.92
Danish.....	1	4,490	3,282.50	.....	.....	.....
Japanese.....	4	18,604	17,236.00	.....	.....	.....
Norwegian.....	1	4,011	4,037.50	2	10,094	7,267.68
United States.....	4	18,267	13,152.24	1	5,041	3,629.52
Totals.....	16	73,409	62,197.71	4	20,446	14,721.12

LATIN-AMERICAN TRAFFIC.

The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality:

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	United States equivalent.	Panama Canal net.	Registered.		Tolls.	Tons of cargo.
				Gross.	Net.		
British.....	18	38,439	48,497	64,513	39,519	\$44,541.33	17,409
United States.....	11	21,845	28,008	35,562	21,940	26,173.24	20,252
Norwegian.....	4	12,860	15,084	20,533	12,913	16,075.00	22,845
Peruvian.....	3	5,358	8,267	11,897	7,452	6,604.65	4,702
German.....	2	3,649	4,735	6,238	3,766	4,561.25	3,552
Chilean.....	2	2,738	4,733	5,282	3,233	3,422.50	997
Dutch.....	1	4,085	4,393	4,368	2,726	5,106.25	1,334
Danish.....	1	4,082	4,490	4,076	2,506	3,232.80	.....
Japanese.....	1	3,590	4,101	5,760	3,548	4,487.50	3,574
French.....	1	3,566	4,081	5,681	3,600	4,457.50	237
Italian.....	1	3,097	3,599	5,376	3,082	3,871.25	524
November, 1921.....	45	103,309	129,988	169,286	104,285	122,533.27	75,426
October, 1921.....	41	88,017	114,095	148,597	91,389	106,777.62	77,406
November, 1920.....	65	.....	199,867	257,572	162,047	.....	226,824

PACIFIC TO ATLANTIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	20	41,927	53,578	70,398	42,717	\$50,384.22	51,198
United States.....	11	28,541	36,132	45,564	28,182	34,052.02	33,642
Norwegian.....	3	9,704	11,551	18,471	9,750	8,366.43	425
Italian.....	2	6,586	8,083	10,548	6,429	8,232.50	8,683
Dutch.....	2	3,667	5,755	5,702	3,710	4,583.75	7,150
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	4,381
French.....	1	3,631	4,166	5,818	3,712	4,538.75	6,100
Danish.....	1	2,490	4,490	4,076	2,506	3,112.50	6,950
German.....	1	1,783	2,924	2,990	1,757	2,228.75	4,500
Chilean.....	1	1,463	2,577	2,553	1,600	1,828.75	121
November, 1921.....	44	102,813	135,166	175,481	105,463	121,103.92	123,150
October, 1921.....	47	114,406	145,941	189,888	117,021	131,832.89	125,384
November, 1920.....	67	.....	230,526	305,163	191,159	.....	207,888

CLASSIFICATION OF COMMERCIAL TRAFFIC.¹

A statement of this month's commercial traffic, classified by nationality of vessels, is shown in the following tabulation:

From Atlantic to Pacific.							
British.....	40	137,664	173,783	219,804	137,861	\$173,092.17	115,767
Chilean.....	2	2,738	4,733	5,282	3,233	3,422.50	997
Danish.....	2	6,549	8,997	8,164	5,012	6,316.55	5,943
Dutch.....	2	8,948	10,459	12,023	7,525	11,185.00	4,382
French.....	3	10,704	12,015	15,931	10,129	13,288.70	634
German.....	2	3,649	4,735	6,238	3,766	4,561.25	3,552
Italian.....	1	3,097	3,599	5,376	3,082	3,871.25	524
Japanese.....	11	45,739	51,445	66,600	44,725	52,413.05	42,544
Norwegian.....	7	25,279	29,207	37,295	24,714	31,598.75	32,856
Panaman.....	1	104	120	193	116	86.40	.....
Peruvian.....	3	5,358	8,267	11,897	7,452	6,604.65	4,702
Swedish.....	1	2,286	4,013	3,764	2,852	2,857.50	1,753
United States.....	48	179,152	227,644	279,174	179,141	218,911.30	173,027
Totals.....	123	431,267	539,017	671,741	429,608	528,209.07	386,681
From Pacific to Atlantic.							
British.....	32	92,034	116,010	148,409	92,179	113,017.97	120,858
Chilean.....	1	1,463	2,577	2,553	1,600	1,828.75	121
Danish.....	1	2,490	4,490	4,076	2,506	3,112.50	6,950
Dutch.....	5	15,508	20,610	24,675	15,612	19,385.00	29,141
French.....	1	3,631	4,166	5,818	3,712	4,538.75	6,100
German.....	1	1,783	2,924	2,990	1,757	2,228.75	4,500
Greek.....	2	6,212	7,429	8,683	5,312	7,671.40	11,956
Italian.....	2	6,586	8,083	10,548	6,429	8,232.50	8,683
Japanese.....	7	31,057	34,188	46,197	30,495	38,295.70	50,847
Norwegian.....	5	15,665	19,892	27,933	15,638	15,817.68	14,762
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	4,381
Spanish.....	2	5,906	7,028	9,214	5,473	7,382.50	12,731
Swedish.....	2	6,659	9,630	9,444	7,159	8,323.75	14,737
United States.....	36	130,415	160,457	202,515	130,306	161,228.13	182,992
Totals.....	99	322,430	403,394	512,416	323,278	394,839.63	468,759
Combined traffic, both ways.							
British.....	72	229,698	289,793	368,213	230,040	286,110.14	236,625
Chilean.....	3	4,201	7,310	7,835	4,833	5,251.25	1,118
Danish.....	3	9,039	13,487	12,240	7,518	9,429.05	12,893
Dutch.....	7	24,456	31,069	36,698	23,137	30,570.00	33,523
French.....	4	14,335	16,181	21,749	13,841	17,827.45	6,734
German.....	3	5,432	7,659	9,228	5,523	6,790.00	8,052
Greek.....	2	6,212	7,429	8,683	5,312	7,671.40	11,956
Italian.....	3	9,683	11,682	15,924	9,511	12,103.75	9,207
Japanese.....	18	76,796	85,633	112,797	75,220	90,708.75	93,391
Norwegian.....	12	40,944	49,099	65,228	40,352	47,416.43	47,618
Panaman.....	1	104	120	193	116	86.40	.....
Peruvian.....	5	8,379	14,177	21,258	12,552	10,380.90	9,083
Spanish.....	2	5,906	7,028	9,214	5,473	7,382.50	12,731
Swedish.....	3	8,945	13,643	13,208	10,011	11,181.25	16,490
United States.....	84	309,567	388,101	481,689	309,447	380,139.43	356,019
Totals.....	222	753,697	942,411	1,184,157	752,886	923,048.70	855,440

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls.

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels, laden.....	104	465,005	\$459,621.40	94	382,875	\$380,065.95
Ballast (excess fuel).....	0	26,907	28,450.00			
Ballast.....	10	46,502	33,698.01	4	20,446	14,721.12
Yacht.....	1	483	347.76	1	73	52.56
Tug.....	1	120	86.40			
Cruiser.....	1	(¹)	6,005.50			
Total commercial.....	123	539,017	528,209.07	99	403,394	394,839.63
Motor ship.....	1	4,012	2,857.50	3	13,011	11,192.50
Motor schooner.....	1	72	78.75	1	72	78.75
Bark.....	1	2,357	2,828.40			
Schooner.....	1	730	878.40			

¹ Displacement tonnage of 12,011 tons.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of, and amount of cargo carried by vessels transiting the Canal free of tolls. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Canal, these not being included in the commercial traffic:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels:						
Navy cargo ship.....	1	¹ 4,861	\$5,833.20			
Cruiser.....	1	² 3,700	1,850.00			
Gunboat.....	1	² 1,500	750.00	1	² 1,500	\$750.00
Coast Guard cutter.....				1	² 1,600	800.00
Tug.....				1	² 1,000	500.00
Subchaser.....	1	² 77	38.50			
United States Army vessels:						
Transport.....				1	² 4,351	3,263.25
Mine planter.....	1	864	622.08			
Launch.....	1	10	5.00			
Commercial vessels with cargo for U. S. Navy.....	3	13,793	12,511.20			
Launches.....	4	13	12.95			

¹ Indicates registered net tonnage.

² Indicates displacement tonnage.

Cargo through the Canal free of tolls:

Atlantic to Pacific..... tons... 30,013

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of November, 1921, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving..... tons..	20,280	3,062	23,342
Local cargo shipped..... tons..	3,346	262	3,608
Transit cargo arriving..... tons..	905,284	889,684	1,794,968
Transit cargo clearing..... tons..	901,109	900,299	1,801,408
Cargo received for transshipment..... tons..	18,378	224	18,602
Cargo transshipped..... tons..	19,539	291	19,830
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received..... tons..	26,845	5,134	32,029
Dispatched..... tons..	25,390	356	25,746
Rehandled..... tons..	1,018	641	1,659
Stevedored..... tons..	22,311	3,991	26,302

	Cristobal.	Balboa.	Total.
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	52	5	57
Panama Railroad vessels.....	5	1	6
United States Army vessels.....		2	2
Total vessels supplied with bunker coal.....	57	8	65
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	13,203	1,095	14,298
Panama Railroad vessels..... tons..	937	721	1,658
United States Army vessels..... tons..		15	15
Total coal supplied to vessels..... tons..	14,140	1,831	15,971
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	659	131	790
Panama Railroad, excepting vessels..... tons..	478		478
United States Army, excepting vessels..... tons..	305		305
Individuals and companies..... tons..	296		296
Total issues from Panama Canal deposits:			
November, 1921..... tons..	15,878	1,962	17,840
October, 1921..... tons..	17,468	771	18,239
November, 1920..... tons..	35,020	5,055	40,075
Coal on hand, December 1, 1921..... tons..	152,187	32,626	184,813
Coal on hand, November 1, 1921..... tons..	136,790	34,588	171,378
Coal received during November, 1921..... tons..	31,275		31,275
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels..... tons..	28	591	619
Coal on hand, December 1, 1921..... tons..	71,127	7,482	78,609
Coal on hand, November 1, 1921..... tons..	71,155	8,073	79,228
Fuel oil issues:			
United States Government vessels..... bbls..	350	1,071	1,421
Panama Canal departments..... bbls..	4,040	13,344	17,384
Panama Railroad..... bbls..	734		734
Army and Navy..... bbls..	102		102
Individuals and companies..... bbls..	25		25
Total issues and sales..... bbls..	5,251	14,415	19,666
Fuel oil on hand, December 1, 1921..... bbls..	59,905	33,363	93,268
Fuel oil on hand, November 1, 1921..... bbls..	65,156	47,778	112,934
Diesel oil issues during November, 1921..... bbls..	17	12	29
Diesel oil on hand, December 1, 1921..... bbls..	50,971	954	51,925
Diesel oil on hand, November 1, 1921..... bbls..	50,988	966	51,954
Oil purposed for individuals and companies..... bbls..	270,758	59,126	329,884
Miscellaneous transfers..... bbls..	3,631	14,408	18,039
Total oil handled..... bbls..	279,657	87,961	367,618
Admeasurement certificates:			
United States equivalent issued or made.....	23	1	24
Measured for Panama Canal net tonnage.....	12	2	14
United States equivalent or Panama Canal net tonnage corrected.....	31	12	43
Services of harbor equipment:			
Tugs, total operating hours.....	388	171	559
Launches, total operating hours.....	1,222	1,079	2,301
Vessels repaired at Panama Canal shops:			
Commercial.....	28	15	43
United States Government.....	2	5	7
Canal equipment.....	8	26	34
Vessels dry-docked:			
Commercial.....	5	2	7
Government.....	1		1
Canal equipment.....	5	7	12
Clearances issued.....	142	134	276
Bills of health issued.....	135	135	270

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal:

Ships entering.	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
All vessels, including those transiting the Canal	279	1,490,833	948,490	238	1,237,853	793,433
Vessels entering port but not transiting the Canal	57	286,382	175,130	8	22,203	14,094
Vessels transiting Canal and stopping for passengers or cargo	41	155,815	93,158	37	142,761	85,338
Ships clearing.						
All vessels, including those transiting the Canal	279	1,486,160	946,366	239	1,255,874	804,791
Vessels entering port but not transiting the Canal	58	280,405	172,354	6	21,432	13,683
Vessels transiting Canal and stopping for passengers or cargo	41	160,481	95,932	38	149,528	89,669

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of November, 1921:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to—						
U. S. Government vessels..	\$140.82	\$586.26	\$428.37		\$32.42	\$1,187.87
Panama Railroad vessels....	115.20	1,334.96	6,763.11		753.40	8,966.67
Other commercial vessels..	1,193.62	3,375.09	14,069.27		743.16	19,381.14
Total sales, November, 1921	1,449.64	5,296.31	21,260.75		1,528.98	29,535.68
Total sales, October, 1921	1,419.23	5,105.86	23,473.28	\$120.82	1,518.08	31,637.37
Total sales, November, 1920	2,898.64	11,455.28	45,177.87	6,319.72	4,326.51	70,178.02
Sales at Balboa to—						
U. S. Government vessels..	37.10	156.87	903.34		47.00	1,144.31
Commercial vessels.....	328.12	441.47	5,111.95	2,882.26	151.64	8,915.44
Total sales, November, 1921	365.22	598.34	6,015.29	2,882.26	198.64	10,059.75
Total sales, October, 1921	1,068.58	3,265.59	11,028.71	2,919.81	301.09	18,583.78
Total sales, November, 1920	579.00	6,992.30	21,247.09	399.75	1,945.88	31,164.02

MOVEMENT OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of November, 1921:

	At Cristobal.			At Balboa.		
	First class.	Other than first class.	Total.	First class.	Other than first class.	Total.
Disembarking:						
From Atlantic ports	1,095	692	1,787	1	3	4
From Pacific ports	117	52	169	103	119	222
Total disembarking	1,212	744	1,956	104	122	226
Embarking:						
For Atlantic ports	845	766	1,611			
For Pacific ports	266	57	323	151	82	233
Total embarking	1,111	823	1,934	151	82	233
Remaining on board vessels:						
From Atlantic to Pacific ports	488	1,345	1,833	719	1,407	2,126
From Pacific to Atlantic ports	238	223	461	362	305	667
From Atlantic to Atlantic ports	299	192	491			
From Pacific to Pacific ports				24	215	239
Total remaining on board	1,025	1,760	2,785	1,105	1,927	3,032
Total passengers arriving	2,237	2,504	4,741	1,209	2,049	3,258
Total passengers departing	2,136	2,583	4,719	1,256	2,009	3,265

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of November, 1921, as compared with that of the preceding month and of the corresponding month of last year.

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	97	120	217	5	4	9	226
Pedro Miguel.....	97	123	220	20	16	36	256
Miraflores.....	97	122	219	19	17	36	255
Total lockages, November, 1921.....	291	365	656	44	37	81	737
Total lockages, October, 1921.....	359	385	744	42	52	94	838
Total lockages, November, 1920.....	337	359	696			82	778

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	101	129	230	13	15	28	258
Pedro Miguel.....	97	127	224	40	36	76	300
Miraflores.....	97	127	224	39	35	74	298
Total vessels, November, 1921.....	295	383	678	92	86	178	856
Total vessels, October, 1921.....	377	460	777	113	103	216	993
Total vessels, November, 1920.....	353	374	727			146	873

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	11	56	54
Canal equipment.....	17	20	20
Total noncommercial vessels.....	28	76	74

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	849,420,000	879,560,000	780,000,000
Leakage.....	20,000,000	15,000,000	67,000,000
Maintenance.....			3,440,000
Total consumption, November, 1921.....	869,420,000	894,560,000	850,440,000
Total consumption, October, 1921.....	1,042,730,000	989,610,000	967,480,000
Total consumption, November, 1920.....	1,102,500,000	963,990,000	893,190,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorological and hydrographical conditions over the Canal Zone and vicinity during the month of November, 1921, are shown in comparative form:

Rainfall.	November, 1921.	November, 1920.	November maximum.	Years of record.	
				Minimum.	Mean.
	Inches.	Inches.	Inches.	Inches.	Inches.
Total for month:					
Pacific Section.....	7.59	15.58	19.62	5.64	10.46
Central Section.....	12.08	10.59	30.40	7.47	13.91
Atlantic Section.....	23.25	15.02	38.48	6.70	21.84
Maximum recorded on any one day.....	9.35	6.11	10.86		
Gatun Lake watershed.....	15.00	11.16	35.74	9.60	14.62
Chagres River watershed above Alhajuela.....	16.95	12.39	40.48	9.15	18.04
Maximum recorded for month at any one point.....	33.29	21.27	45.03		
Minimum recorded for month at any one point.....	3.45	5.47		2.87	
<i>Hydrography.</i>					
	C. f. s.	C. f. s.	C. f. s.	C. f. s.	C. f. s.
Discharge of Chagres River at Alhajuela.....	4,176	3,751	11,300	2,267	4,581
Maximum momentary discharge for month.....	24,950	23,600	170,000		
Gatun Lake watershed total yield.....	12,061	11,096	24,488	8,673	13,418
Gatun Lake watershed net yield.....	11,660	10,602	23,950	7,995	12,932
Draft on Gatun Lake for lockages and power.....	2,125	2,348	2,348	537	1,686

* This represents the maximum 24-hour rainfall recorded on the Isthmus since the American occupation. Recorded at Porto Bello on December 28-29, 1909.

* This figure represents the maximum momentary discharge on record. Occurred on December 26, 1909.

SEISMOLOGY.

Four slight seismic tremors were recorded by the Balboa Heights seismographs during the month. The tremors recorded on the 2d and 11th were so slight that no distance of epicenter could be determined. The epicenter of the tremor recorded on the 13th was about 550 miles distant and probably to the northwest, while the epicenter of the tremor recorded on the 27th was about 70 miles distant and probably came from the southwest.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., is shown in comparative form in the following tabulation:

	November, 1921.	October, 1921.	November, 1920.
Gross output, KWH:			
Gatun hydroelectric station.....	4,853,900	5,304,100	5,700,600
Miraflores steam plant.....	400	1,190	122,020
Combined gross output.....	4,854,300	5,305,290	5,822,620
Water consumption..... cubic feet.....	3,779,696,146	4,062,727,820	4,124,870,000
Oil consumption..... barrels.....	1,827	1,953	2,733
Power distributed to consumers..... KWH.....	4,137,872	4,448,013	4,902,701
Loss of power in plant auxiliaries, transmission and transformation..... KWH.....	716,428	857,277	934,199
Per cent loss of power to gross output.....	17.3	16.15	16.1

Miscellaneous electrical repairs and installations of electrical equipment were made on 15 vessels at Cristobal and 23 vessels at Balboa during the month. There were 328 work orders issued for work to be performed by the Electrical Division during the month, as compared with 365 for October. The following work was under progress during the month, with completion on November 30, as shown:

	Per cent completed.
Installation of switching and other electrical equipment for fifth generating unit at hydro-electric station.....	75
Installation of one 3-phase 44,000-6,600-volt, 8,400 KVA transformer, and three 300-ampere, 15,000-volt tie-line equipments at the Gatun substation.....	95
Installation of 2 complete feeder equipments at Balboa substation.....	100

SHOP, FOUNDRY, AND DRY DOCK WORK.

The output of the Mechanical Division in patterns and castings for November 1921, as compared with the preceding month, was as follows:

	November, 1921.			October, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	1	304	17,456	4	227	12,943
Steel.....		73	11,896		95	8,258
Brass.....	3	286	5,902	10	126	6,423

During the month miscellaneous repairs were made on 46 vessels at Balboa and 38 vessels at the Cristobal shops. Of the above vessels, 9 were placed in dry dock at Balboa, and 11 at Cristobal.

Repairs to the steamship *Panama*, which were begun last July, were completed during the month, and dock trials were held on November 14, and successful sea trials on November 29. On this ship the question has been not so much the completion of all the necessary and desirable repairs but rather to obtain the maximum in repairs within the funds available. The rank and file of the Mechanical Division have exerted every effort to give the ship the maximum repairs possible within the allotment, and the results are much to their credit.

The steamship *Imperial* was docked and a small amount of underwater repairs carried out, including the fitting of a shoe to her fore foot and work on the rudder. Several vessels of the Dredging fleet were dry-docked and incidental repairs made.

The decision not to carry out the rebuilding of the steamship *Empire* on account of the expense involved being in excess of the worth of the vessel has operated to cause a further reduction in the working force of the Balboa shops. Between October 31 and November 30, 1921, there has been an approximate reduction of 20 per cent in both the gold and silver employees of the Mechanical Division.

DREDGING DIVISION.

West Culebra and Barge Repair slides showed no perceptible movement during the month. Cucaracha slide continued to show some movement in certain parts of the slide area near the southern crest. A total of 113,600 cubic yards of material was removed from in front of this slide during the month. There was no inconvenience to Canal traffic from slides during the month.

The total excavation for November, including earth and rock, was 388,700 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment.
	Earth.	Rock.			
113,600	29,500	84,100	Maintenance.....	<i>Gaillard Cut, Cucaracha.</i> 1805-00 to 1821-00 E. and W.....	<i>Paraíso.</i>
14,000		14,000	Construction.....	<i>Pacific entrance.</i> 2180-00 to 2210-00 E.....	<i>Cascadas.</i>
12,300	12,300		Maintenance.....	2180-00 to 2210-00 C.....	<i>Cascadas.</i>
60,100	60,100		Maintenance.....	2217-50 to 2231-50 E.....	<i>No. 86.</i>
59,200	59,200		Maintenance.....	2085-00 to 2098-00 C. L. and W.....	<i>No. 84.</i>
				2111-80 to 2124-50 W.....	<i>No. 84.</i>
48,300	48,300		Maintenance.....	<i>Pacific entrance—Miraflores P. I.</i> 2085-00 to 2111-60 W.....	<i>No. 84.</i>
81,200	81,200		Maintenance.....	<i>Balboa inner harbor.</i> 2217-00 to 2232-00.....	<i>No. 86.</i>
388,700	290,600	98,100			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	113,175
Dumped on flats west of Canal.....	96,500
Dumped on flats east of Canal.....	11,000
Dumped on San Juan fill.....	141,300
Dumped at sea, Pacific entrance.....	26,300
Dumped north of Gold Hill.....	425
Total.....	388,700

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form.

	November, 1921.	October, 1921.	November, 1920.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	648,258,750	698,577,500	791,327,975
Filtration plants.....	382,858,000	419,324,000	494,823,000
Water consumed by Panama City.....	93,862,000	94,136,000	89,872,000
Water consumed by Colon.....	48,221,250	51,470,000	69,532,000
Sales of water to vessels.....	10,220,274	10,181,372	14,208,184

Construction work, as itemized below, was under progress during the month, with completion on October 31, and November 30, as shown:

	Per cent completed.	
	Oct. 31.	Nov. 30.
Construction of new concrete sea wall, Santo Tomas Hospital.....	95	97
Extension of roads, new Santo Tomas Hospital.....	8	30
Grading of Silver City, Mount Hope.....	85	90
Storm sewer, Diablo Road, at lumber shed.....	86	100
Foundation for statue of Balboa.....	79	79
Extension of sewers, new Santo Tomas Hospital.....	36	36
Raising track at Pier No. 6, Cristobal.....	60	100
Extension of sea wall, new Santo Tomas Hospital.....	10	35
Installation of electric duct line.....		30

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	November 30, 1921.			Total occupants.		
	Men.	Women.	Children.	November, 1921.	October, 1921.	November, 1920.
Americans.....	2,644	2,131	2,306	7,081	7,020	8,363
Europeans.....	145	39	91	275	261	253
West Indians.....	4,823	2,488	5,400	12,711	12,865	10,952
Totals, November, 1921.....	7,612	4,658	7,797	20,067		
Totals, October, 1921.....	7,748	4,627	7,771		20,146	
Totals, November, 1920.....	8,384	4,332	6,852			19,568

WORKING FORCE.

The following tabulation shows the number of gold and silver employees as of November 16, 1921, by departments, together with a comparison of the working force for the preceding month and that of November, 1920:

	Employees as of November 16, 1921.		Total employees.		
	Gold.	Silver.	November, 1921.	October, 1921.	November, 1920.
Operation and Maintenance:					
Office.....	29	33	62	62	67
Electrical.....	156	159	315	316	473
Municipal Engineering.....	79	535	614	676	1,072
Lock Operation.....	168	559	727	718	741
Dredging.....	153	720	873	876	1,309
Mechanical.....	487	732	1,219	1,376	2,910
Marine.....	166	368	534	553	689
Fortifications.....	41	181	222	313	682
Totals.....	1,279	3,287	4,566	4,890	7,043
Supply Department:					
Quartermaster.....	172	1,065	1,237	1,342	2,598
Subsistence.....	21	230	251	262	400
Commissary.....	185	928	1,113	1,195	1,753
Cattle Industry—Plantations.....	16	164	180	181	410
Hotel Washington.....	8	83	91	89	102
Totals.....	402	2,470	2,872	3,069	5,263
Accounting Department.....	192	7	199	204	262
Health Department.....	227	739	966	980	1,074
Executive.....	532	247	779	787	825
Totals.....	951	993	1,944	1,971	2,161

	Employees as of November 16, 1921.		Total employees.		
	Gold.	Silver.	November, 1921.	October, 1921.	November 1920.
Panama Railroad:					
Superintendent.....	53	268	321	271	5
Transportation.....	74	107	181	188	2
Receiving and Forwarding Agency.....	63	828	891	913	1,169
Coaling stations.....	84	389	473	526	800
Totals.....	274	1,592	1,866	1,898	2,933
Grand totals, November, 1921.....	2,906	8,342	11,248		
Grand totals, October, 1921.....	3,061	8,767		11,828	
Grand totals, November, 1920.....	4,285	14,015			18,300

* Includes employees of former Building Division.

SCHOOLS.

The following brief summary shows the enrollment, average attendance, etc. in the white and colored schools of the Canal Zone, for the month of November 1921:

	White.	Colored.	Total.
Gross enrollment.....	1,777	1,514	3,291
Net enrollment.....	1,747	1,494	3,241
Average daily attendance.....	1,585.7	1,273.1	2,858.8
Pupils neither absent nor tardy.....	961	535	1,496
Number of cases of tardiness.....	324	22	346
Number of teachers.....	78	32	110

VITAL STATISTICS.

A total of 220 deaths occurred during the month of November, 1921, among the population of the Canal Zone and the cities of Panama and Colon, which is equivalent to an annual death rate of 21.30 per thousand. The 3 leading causes of death were tuberculosis, pneumonia, and diarrhea and enteritis; these 3 diseases caused 37 per cent of all deaths from disease. Among other causes of death were 2 from malaria, 3 from dysentery, and 1 from scarlet fever. Of the total deaths 91, or 41 per cent, occurred among children under 5 years of age. There were 6 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 340 live births reported during the month, and 23 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 35.16 per thousand population. Deaths among children under 1 year of age numbered 63, giving an infant mortality rate, based on the number of births reported for November, of 185.29 per thousand live births.

Sixty-nine cases of malaria were reported during the month, of which 8 were employees and 61 were nonemployees; of the nonemployees 45 were soldiers. These malarial cases originated as follows: In Colon, 3; in the Canal Zone, 46; and outside of the Canal Zone, 20.

Among other diseases reported during the month were 25 cases of measles, 3 of smallpox, 6 of scarlet fever, 12 of diphtheria, and 1 of poliomyelitis.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, are shown below in comparative form.

	November, 1921.	October, 1921.	November, 1920.
Materials received on United States requisitions during November, chargeable as follows:			
Operation and Maintenance	\$41,683.19	\$98,337.89	\$1,271,100.48
Construction and equipment			15,586.13
Miscellaneous	3,866.24	10,602.48	15,127.86
Totals	45,549.43	108,940.37	1,301,814.47
Cash sales on the Isthmus:			
Stock	20,416.26	21,942.32	30,996.87
Fuel oil (including sales to ships)	818.65	669.17	87,063.73
Scrap	617.57	1,275.21	1,408.56
Obsolete and second-hand material	1,964.37	4,439.78	734.84
Totals	23,816.85	28,326.48	120,204.00
Sales to steamships from storehouses:			
Miscellaneous stock items	5,497.93	4,579.39	17,922.57
Fuel oil	776.15	21.67	60,454.45
Totals	6,274.08	4,601.06	78,377.02

Respectfully,

JAY J. MORROW,

Governor.

Record of Good Work on the "Panama."

In connection with the recent completion of the overhauling and general repairing of the steamship *Panama* of the Panama Railroad Steamship Line, the Superintendent of the Mechanical Division issued the following bulletin to all concerned, under date of December 14:

1. A letter has been received from the superintendent of the Panama Railroad congratulating the Mechanical Division on the character of the work performed on the steamship *Panama*. Particular mention was made of the cooperation on the part of all employees with the captain of the vessel and the engineer in charge of the work. Credit is due all employees connected with the overhaul of the steamship *Panama* for the excellent record made.

2. This tribute from the superintendent of the Panama Railroad, together with other evidences of satisfaction on the part of Panama Canal departments, commercial firms and individuals, indicate that the reputation of the Mechanical Division is improving each day. Whether or not this reputation continues to improve depends upon the efforts of each and every employee. It should be needless to point out that the success of the Mechanical Division depends largely upon its reputation.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending December 24, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Ginyo Maru	Toyo Kisen Kaisha	December 18..	December 19..	37	72
George Washington	Peter Olsen	December 18..	December 18..	166	.....
Laura C. Hall	Pacific Metals Trans. Co., Ltd.	December 18..	December 20..	8	.....
Laura C. Hall	Pacific Metals Trans. Co., Ltd.	December 21..	December 21..	.....	68
Takaoka Maru	Nippon Yusen Kaisha	December 21..	December 21..	.....	20
Neches	U. S. Government (Navy collier) ..	December 21..	.....	3,750	.....
Targis	Roland Steamship Line	December 21..	December 21..	99	.....
Depere	U. S. Shipping Board	December 22..	December 22..	.....	88
Cristobal	Panama Railroad Steamship Line ..	December 23..	.....	9,677	.....
Salvador	Pacific Steam Navigation Co.	December 24..	December 24..	2	.....
Barima	Pacific Steam Navigation Co.	December 24..	December 24..	2	.....
U. S. S. Caesar	U. S. Government	December 24..	December 24..	1	.....

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, November, 1921.*

FROM—	NORTH AMERICA.							EUROPE.												Grand total.	Per cent of total cargo.		
	UNITED STATES.																						
	Total, United States.				West Indies.			Cristobal, C. Z.	Total, North America.														
	North Atlantic ports.	South Atlantic ports.	Gulf ports.	South Atlantic ports.	West Indies.	Cristobal, C. Z.	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Spain.	Sweden.	Europe. ²	Total, Europe.	East coast of South America.				

Figures represent tons of 2,240 pounds.

* General cargo not routed so as to allow segregation between definite ports.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, November, 1921.*

From—	SOUTH AMERICA.					NORTH AMERICA.					ASIA.				AUSTRALASIA.				Grand totals.	Per cent of total cargo.			
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. ¹	Total South America.	West coast of United States.	Canada.	West coast of Central America.	Balboa, C. Z.	Total North America.	China.	Japan.	Philippines.	Far East. ²	Total, Asia.	Australia.	New Zealand.			Australasia. ³	Total, Australasia.	Hawaii.
UNITED STATES:																							
North Atlantic ports	4,026	189	224	6,105	1,714	12,258	75,163	136	643		75,942	10,552	32,286	128	20,136	63,102	102	240	22,274	22,616	2,300	176,218	45.6
South Atlantic ports.				2,567		2,567	6,560		6		6,566	2,213	8,470		685	11,368						20,501	5.3
Gulf ports							6,401				6,401	11,314	26,156	3,230	5,632	46,332	4,839	1,490		6,329		59,062	15.3
Total, United States.	4,026	189	224	8,672	1,714	14,825	88,124	136	649		88,909	24,079	66,912	3,358	26,453	120,802	4,941	1,730	22,274	28,945	2,300	255,781	66.2
East coast of Mexico.							20,300			9,000	29,300											29,300	7.6
Atlantic terminus, Cristobal, C. Z.		638	80	215	1,930	2,863	3,051		1,536		4,587											7,450	1.9
Total, North America.	4,026	827	304	8,887	3,644	17,688	111,475	136	2,185	9,000	122,796	24,079	66,912	3,358	26,453	120,802	4,941	1,730	22,274	28,945	2,300	292,531	75.7
Europe:																							
Belgium.	50		5	12	459	526	3,032				3,032											3,558	.9
British Isles	6,323		530	5,145	638	12,636	11,355	930	300		12,585	1,200	1,200			2,400		41,114		41,114	5,943	74,678	19.3
France.	147		35	106	75	363	37	360	8		405											768	.2
Germany.	272			500	3,852	4,631	2,258		490		2,748											7,379	1.9
Holland.					740	740	28	140			168											908	.2
Italy.					136	136																136	.1
Spain.					63	63	1,747		6		1,753											63	.1
Sweden.							3,567	464			4,031											1,753	.4
Europe. ²					378	378																4,409	1.1
Total Europe.	6,792		570	5,763	6,348	19,473	22,024	1,894	804		24,722	1,200	1,200			2,400		41,114		41,114	5,943	93,652	24.2
East coast of South America.							261				261	15	222			237						498	.1
Grand totals.	10,818	827	874	14,650	9,992	37,161	133,760	2,030	2,989	9,000	147,779	25,294	68,334	3,358	26,453	123,439	4,941	42,844	22,274	70,059	8,243	386,681	100.0
Per cent of total cargo Novem-ber, 1921.	2.8	0.2	0.2	3.8	2.6	9.6	34.6	0.5	0.8	2.3	38.2	6.5	17.7	0.9	6.8	31.9	1.3	11.1	5.8	18.2	2.1	100.0	
Per cent of total cargo, October, 1921.	6.1	0.3	0.2	1.9	2.4	10.9	31.8	4.4	2.2		38.4	9.0	23.8	0.4	2.1	35.5	2.7	9.9	2.5	15.1	0.1		
Per cent of total cargo, Novem-ber, 1920.	25.0	0.5	0.5	3.3	10.6	40.4	15.7	2.1	1.0		20.7	2.6	2.2	2.0	5.2	11.9	11.1	10.2	5.7	27.0			

* Figures represent tons of 2,240 pounds.

² General cargo not routed so as to allow segregation between definite ports.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, December 24, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Mesopotamia...	17	12	08	18	6	30	18	19	02	British.	373	50	25	New York	Yokohama.	Steel	5,660	4,846	3,502
Los Angeles	17	21	35	18	7	43	18	15	46	American.	435	56	30	Puerto Lobos.	San Francisco.	Crude oil	11,000	7,193	4,903
Hoveisan Maru	18	12	09	18	8	53	18	15	46	Japanese.	419	51	25	Boston.	Union Bay.	General	7,099	6,189	4,440
West Netus	18	7	50	18	11	08	18	15	46	American.	410	54	22	Buenos Aires.	San Francisco.	General	5,471	6,583	4,914
Arwa	17	16	47	18	11	45	18	20	03	British.	459	50	28	New York	Wellington.	General	6,250	10,035	7,504
Thomas P. Beal	18	11	45	18	12	55	18	20	03	American.	394	55	18	Port Talbot.	Los Angeles.	General	2,500	7,047	4,998
Iwatsen Maru.	18	18	32	19	6	40	19	14	33	Japanese.	385	51	15	Hull	Seattle.	Ballast	150	8,589	4,229
Karona	19	4	15	19	8	52	19	16	14	British.	433	57	14	Cristobal	Seattle.	Lined oil	273	8,586	6,995
Acequia	9	20	05	20	6	10	20	13	44	British.	215	33	5	Cristobal	Champerico.	General	273	1,273	706
K. R. Kingsbury	19	14	27	20	7	07	20	16	05	American.	440	58	32	Cristobal	Balboa.	Crude oil	10,881	9,033	5,938
Westmoreland.	19	21	52	20	8	27	20	16	58	British.	473	60	28	Liverpool.	Auckland.	General	9,000	10,385	7,505
Montrose	20	12	30	20	12	52	20	19	17	British.	365	47	24	Sabine.	Adelaide.	General sulphur	4,600	4,680	3,441
Targis	20	14	04	21	6	05	21	14	03	German.	264	42	0	Bremen.	Puntarenas.	General	741	2,174	1,320
S.C. 284 & 285	21	7	03	21	6	45	21	10	20	American.	445	58	25	New York	Pedro Miguel.	General	8,492	7,579	5,507
Takaoka Maru	21	15	52	21	8	30	21	17	57	Japanese.	476	50	21	Mobile	Yokohama.	Oil stores	3,750	10	132
Neches	20	16	33	21	9	02	21	18	00	American.	81	25	10	Cristobal	West Coast.	General	10	132	72
Leura C. Hall	20	16	33	21	9	02	21	18	00	British.	385	51	25	Baltimore.	Buenaventura.	General	5,596	5,909	4,416
Sumatra Maru	21	8	46	21	11	40	21	19	35	Japanese.	385	51	25	Cristobal	Kobe.	Unknown	1	1	1
Cayuco 2220	20			21			21	9	30	Panama				Cristobal	Gatun Lake.	Ballast	2,100	4,011	2,860
La Neva	21			21			21	13	47	American	349	3	46	Cristobal	Gatun Lake.	General	18	1,471	999
Merchant	21	6	58	22	6	15	22	15	19	British.	321	5	23	New York	Seattle.	General	3,660	9,159	6,883
Eiger	21	10	35	22	6	23	22	15	21	Norwegian.	457	58	23	London	Guayaquil.	General	2,034	7,539	5,448
Blumaka	21	20	30	22	7	33	22	17	35	British.	424	56	26	Hampton Rds.	Wellington.	General	9,677	10,697	8,063
Steel Mariner	22	7	52	22	12	40	22	20	03	American	483	61	13	New York	Seattle.	General	400	5,567	3,980
Pro	21	22	10	23	7	05	23	14	38	American	483	61	13	Hampton Rds.	Manila.	General	2,780	9,258	6,912
Scota	23	5	30	23	7	05	23	15	49	American	483	61	13	Cristobal	Balboa.	General	6,970	5,370	3,810
Cristobal	23	7	00	23	7	10	23	15	49	American	483	61	13	Cristobal	Balboa.	General	4,217	8,543	6,427
Araba	23	7	00	23	7	10	23	15	49	American	483	61	13	Cristobal	Balboa.	General	360	5,979	4,170
Virginie	21	21	30	23	8	15	23	15	25	Panamanian	103	24	9	Colon	Cocos Island.	Ballast	400	5,567	3,980
Calima	22	13	11	23	8	15	23	17	05	French.	358	22	4	Autwerp	Talcahuano.	General	400	5,567	3,980
Nexuan	22	13	11	23	8	15	23	17	05	French.	358	22	4	Autwerp	Talcahuano.	General	400	5,567	3,980
Satsuna	23	3	41	23	8	38	23	18	20	American.	270	37	2	Boston	Salina Cruz.	Ballast	2,780	9,258	6,912
Julia Luckenbach	22	17	49	23	9	35	23	19	33	American.	372	37	2	New York	Seattle.	General	6,970	5,370	3,810
Saint Joseph.	22	22	35	23	10	43	23	20	29	American.	436	57	0	New York	San Francisco.	General	4,217	8,543	6,427
	22	19	27	24	6	13	24	16	53	French	398	51	0	Bordeaux.	San Francisco.	General	360	5,979	4,170

* Motor schooner.

* Tug.

* Ammunition ship.

* Collier.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

* Transport.

Honduras	18	5	57	18	7	38	18	15	30	19	18	50	French	Cie. Generale Transatlantique.	389	9	51	3	20	0	Vancouver	Hamburg	General	3,540	6,020	4,363		
Munindes	18	9	45	18	10	53	18	18	10	18	18	10	American	Munindes Steamship Corp.	370	0	53	2	24	6	Everett, Wash.	New York	Lumber	5,700	5,527	4,099		
George Wash- ington	18	10	44	18	14	50	19	0	33	19	12	33	Norwegian.	Peter Olsen	425	0	55	3	28	0	San Francisco	Berlin	(7)	8,786	7,505	5,626		
Texas	19	6	00	19	7	45	19	15	20	19	18	40	American	American Hawaiian Line.	471	0	57	2	26	0	San Diego	Liverpool	General	9,000	9,154	7,033		
Gastelu	19	6	05	19	8	41	19	16	50	19	18	10	Spanish.	Navigera Bermeo Co.	341	0	48	0	21	6	Iquique	Bordeaux	Nitrate	4,830	4,297	2,898		
Oak Branch	19	8	00	19	9	36	19	18	00	19	23	35	British.	F. and W. Ritson.	338	5	49	8	23	0	Antofagasta.	Liverpool	General	6,344	5,209	4,031		
Taiho Maru.	19	8	30	19	10	40	19	19	15	19	20	30	Japanese.	Kokusai Kisen Kaisha.	407	2	50	8	25	6	Antofagasta.	Norfolk	Nitrate.	7,416	6,199	4,524		
George	19	18	00	20	7	30	20	16	45	21	17	58	French	Cie. Generale Transatlantique.	410	1	52	7	16	9	Valparaiso.	Angers	(4)	7,143	6,830	4,932		
Laura C. Hall	18	15	00	20	7	35	20	16	23	21	9	02	British.	Pacific Metals Corp.	81	0	25	0	10	0	Buenaventura.	Cristobal	Coffee, platinum	48	132	72		
Middleham	20	19	00	21	7	47	21	15	30	21	16	28	British.	James Chambers Co.	389	0	50	0	24	0	Callao.	Falmouth.	Sugar	6,400	5,028	3,798		
Cape Henry	21	5	15	21	8	30	21	16	45	21	18	15	American.	Atlantic-Gulf-Pacific Co.	391	0	52	0	19	2	Seattle	Baltimore.	General	4,800	5,148	3,522		
Harry Lucken- bach	21	12	30	21	13	30	21	12	05	21	21	35	American	Luckenbach Line	448	9	60	2	24	1	San Francisco	New York	General	5,000	9,262	6,853		
S. S. 284	21	10	20	21	12	05	21	16	24	21	16	24	American	United States Navy	110	0	16	0	0	0	Pedro Miguel	Cristobal	General					
S. C. 285	21	10	20	21	12	05	21	16	24	21	16	24	American	United States Navy	110	0	16	0	0	0	Pedro Miguel	Cristobal	General					
Derritid	21	15	45	22	6	45	22	14	42	22	14	42	British	Elder Steel Steamship Co.	434	3	57	7	19	8	Seattle.	New York	General	3,682	7,893	5,647		
Jamaica	22	4	30	22	8	07	22	16	07	22	16	07	British	Pacific Steam Navigation Co.	220	0	34	0	10	3	Tumaco	Pto. Colombia	General	117	1,187	622		
Balboa	22	4	05	22	8	07	22	16	07	22	16	07	American	Colombian Maritime Co.	190	0	19	1	15	5	Tumaco	Cristobal	Coffee, specie	616	741	350		
Neptune	21	18	00	22	8	45	22	16	45	23	4	10	American	United States Navy	520	2	65	2	20	0	San Diego.	Hampton Rds		11,075	6,425			
K. R. Kings- bury	20	16	05	22	12	07	22	19	42	22	19	42	American	Standard Oil Co.	440	0	58	0	31	5	Balboa	London	Oil	11,500	9,033	5,938		
Ulysses	22	3	30	22	13	59	22	22	14	23	15	09	Dutch.	Royal Netherlands W. I. Mail	346	2	45	2	21	0	Valparaiso	London	General	3,856	4,145	3,057		
Anna	22	20	00	23	7	49	23	16	22	25	7	20	Norwegian.	P. J. Janssen	265	0	37	1	15	0	Guayaquil	New York	Cocoa, coffee	890	1,851	1,179		
Barina	23	20	05	24	7	51	24	16	35	24	16	35	British	Pacific Steam Navigation Co.	220	0	37	0	13	0	Champerico	Cristobal	General	511	1,634	871		
Fairfield City.	23	21	20	24	8	27	24	16	03	24	16	03	American	United States Steel Products Co.	424	2	56	2	21	10	Tientsin.	Philadelphia.	(10)	3,569	7,539	5,448		
Caesar	24	7	20	24	9	41	24	17	55	24	17	55	American	United States Government	307	6	43	11	16	6	San Diego.	Hampton Rds		280				
Salvador	24	10	25	24	11	10	24	18	05	24	18	05	British.	Pacific Steam Navigation Co.	215	0	33	0	16	6	Guayaquil.	Cristobal	General	753	1,213	692		
Scotia	23	12	05	24	10	51	24	17	55	24	17	55	American	United States Navy	149	4	30	0	0	0	Balboa	Cristobal						
Agawdale	24	12	15	24	12	56	24	18	50	24	18	50	American	Malloy Shipping Co.	370	0	53	1	22	0	Portland.	Boston	General	3,700	5,527	4,138		
Kentuckian	24	12	16	24	14	07	24	21	14	24	21	14	American	American Hawaiian Line.	414	0	53	7	22	0	Seattle	New York	General	4,500	7,049	4,941		

* Barley, flour, and general.

* U. S. Navy auxiliary.

* Licorice root and beans.

* Canned fruit and general (Navy).

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

MOVEMENTS OF OCEAN VESSELS—Continued.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Dec. 18	Abangarez	United Fruit Co.	New Orleans via Habana.	Dec. 18	Abangarez	United Fruit Co.	Bocas.
Dec. 18	Jeanne D'Arc ¹²	French Government	Port-of-Spain, Trinidad.	Dec. 18	Camden	United Fruit Co.	Tampico.
Dec. 18	San Benito	United Fruit Co.	Boston via wayports.	Dec. 18	San Benito	United Fruit Co.	Boston via wayports.
Dec. 19	Parismina	United Fruit Co.	New Orleans.	Dec. 21	Abangarez	United Fruit Co.	New Orleans.
Dec. 20	Pastores	United Fruit Co.	New York via Habana.	Dec. 21	Pastores	United Fruit Co.	New York via Habana
Dec. 21	Abangarez	United Fruit Co.	Bocas.	Dec. 21	Stuyvesant	Royal Netherlands W. I. Mail.	and Limon.
Dec. 21	San Blas	United Fruit Co.	Boston via Habana.	Dec. 22	Jeanne D'Arc ¹²	French Government	Port Limon.
Dec. 21	Stuyvesant	Royal Netherlands W. I. Mail.	Amsterdam via wayports.	Dec. 22	Parismina	United Fruit Co.	New Orleans.
Dec. 22	Columbia	N. O. and S. A. Steamship Line.	New Orleans and wayports.	Dec. 22	United Fruit Co.	United Fruit Co.	New Orleans via Bocas and Habana.
Dec. 22	Haiti	French Line.	St. Nazaire and wayports.	Dec. 22	San Blas	N. O. & S. A. Steamship Line.	Boston via Limon.
Dec. 23	Caribbean	Panama Railroad Commissary	Cartagena.	Dec. 22	Columbia	Panama Railroad Steamship Line.	New Orleans.
Dec. 23	Grebe ¹³	United States Navy	Norfolk.	Dec. 24	Alianza	Elders & Fyffes, Ltd.	New York via Haiti.
Dec. 23	Antonio Lopez	Spanish Line.	Habana.	Dec. 24	Camito		Kingston.
Dec. 24	Camito	Elders & Fyffes, Ltd.	Port Limon.				
Dec. 24	Stuyvesant	Royal Netherlands W. I. Mail.	Port Limon.				
				¹³ Mine planter and barge.			
				PORT OF BALBOA			
				¹² Cruiser.			
Dec. 18	Ginyo Maru	Toyo Kisen Kaisha	Valparaiso.	Dec. 19	Ginyo Maru	Toyo Kisen Kaisha	Hongkong.
Dec. 22	Depere	General Steamship Corp. (S. B.).	San Francisco.	Dec. 22	Depere	General Steamship Corp. (S. B.).	Valparaiso.
Dec. 22	Cambrian ¹⁴	British Government.	Guayaquil.				

¹³ Mine planter and barge.

PORT OF BALBOA

¹² Cruiser.

Dec. 18.	Ginyo Maru.	Toyo Kisen Kaisha	Valparaiso.	Dec. 19	Ginyo Maru.	Toyo Kisen Kaisha	Hongkong.
Dec. 22	Depere.	General Steamship Corp. (S. B.).	San Francisco.	Dec. 22	Depere.	General Steamship Corp. (S. B.).	Valparaiso.
Dec. 22	Cambrian ¹⁴ .	British Government.	Guayaquil.				

Other than ships passing through the Canal.

¹⁴ H. M. S. Cruiser.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended December 24:

Steamship *K. R. Kingsbury*, dock and undock (without discharging cargo); remove base from broken propeller blade and install new propeller blade; cement hub; scows *No. 131*, dock and undock; stage and clean; scale bottom up to 6-foot draft line; paint bottom 2 coats of anticorrosive and 1 coat of antifouling; redrive or weld all loose rivets under water line; stop all leaks; test all tanks; remove and rake fenders; straighten coaming; remove 5 strongback supports and replace with new style; repair sheave housing; *No. 141*, dock and undock; stage and clean; scale bottom up to 6-foot draft line; paint bottom 2 coats of anticorrosive and 1 coat of antifouling; redrive all loose rivets under water line; stop all leaks; test all tanks and overhaul winding gear; grader *No. 3*, dock and undock; stage and clean; scale bottom up to 7-foot draft line; redrive all loose rivets in hull below water line; stop all leaks, and test all tanks; scow *No. 139*, in addition to work previously reported on scow *No. 139*, the following work is being performed: Dock and undock; stage and clean; scale bottom up to 6-foot draft line; paint 2 coats of anticorrosive and 1 coat of antifouling; remove 3 modified strongbacks; remove and straighten 6 channel irons; renew 6 angles and renew 8 cover plates over wood and install new style plate brackets with double channel iron in place of old type cast brackets; bush 8 sheaves and install bushing on deck; repair wood fillers on 3 strongbacks; remove and replace hopper sheathing and install approximately 50 new pieces in way of repairs; renew rubbing pieces on strongback supports.

PREVIOUSLY REPORTED.

Barge *No. 102*, dock and undock; scale and paint; *No. 121*, dock and undock; scale and paint; dredge *No. 86*, dock and undock; scale and paint; minor hull repairs; motorship *Chiralite*, heavy operation and miscellaneous repairs; steamship *Lady Sybil*, heavy operation and miscellaneous hull repairs; launch *No. 405*, installation of new engine bed and light repairs.

The following vessels were at the Cristobal shops for repairs during the week ended December 26:

Steamships *Quibdo*, dock and undock; clean and paint bottom; renew stern bushing; change propeller; repair shoe; install liner on tail shaft, etc.; *Cape May*, make 6 slice bars; repair telemotor system; braze main feed pump float; examine ice machine, etc.; *Balboa*, repair galley stove; make studs and scale boilers; *Jamaica*, install sheaves and brackets at brest of poop for steering chains; *Advance*, *St. Joseph*, *Cristobal*, and *Haiti*, minor repairs.

PREVIOUSLY REPORTED.

U. S. N. barge *No. 479*, scrape and paint bottom; test tanks; renew rivets where necessary; scrape and red lead tanks, decks, stanchions, etc.; steamship *Allianca*, repair piping; tug *Engineer*, scale boilers; remetal H. P. crank brass; fit brasses to L. P. link block, etc.; D. B. launch *L-53*, repair bulwarks, rudder head, shoe, lower fender, etc.; install copper patches on hull; overhaul reverse gear; true up pistons; manufacture new ring; overhaul magneto; overhaul air and bilge pump; test and repair tank, etc.

Official Circulars.

Medical Storehouse Transferred.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., December 20, 1921.
CIRCULAR No. 660-58.

Effective January 1, 1922, the Medical Storehouse at Ancon, including the personnel and all stock on hand, will be transferred from the Health Department to the Supply Department and will be consolidated with the General Storehouse at Balboa.

JAY J. MORROW,
Governor.

Typewriters for Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, S. D., Administration Building, Balboa Heights.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution to shipping of such notices and circulars. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

PANAMA RAILROAD PASSENGER TRAIN TIME-TABLE No. 36, EFFECTIVE JANUARY 1, 1922.

MAIN LINE STATIONS.				MAIN LINE STATIONS.			
Daily.	Mixed pass and freight except Sunday.	Daily.	Mixed pass and freight except Sunday.	Daily.	Mixed pass and freight except Sunday.	Daily.	Mixed pass and freight except Sunday.
3	5	7		2	4	8	
Leave	P. M.	P. M.	Leave	A. M.	P. M.	P. M.	
Colon	9 10	4 00	Panama	7 00	12 15	6 10	Daily.
Mount Hope	9 15	4 05	Balboa Heights	7 05	12 20	6 15	
Fort Davis	9 24	4 14	Corozal	7 10	12 26	6 20	
Gatun	9 29	4 19	Fort Clayton	7 14	12 30	6 24	
Monte Lirio	9 43	4 33	Red Tank	7 19	12 36	6 29	
Fr. Joles	9 54	4 45	Pedro Miguel	7 23	12 40	6 33	
Darien	10 01	4 52	Summit	7 35	12 53	6 45	
Gamboa	10 10	5 01	Gamboa	7 46	1 05	6 56	
Summit	10 21	5 12	Darien	7 54	1 15	7 05	
Pedro Miguel	10 32	5 23	Frijoles	8 02	1 24	7 13	
Red Tank	10 35	5 26	Monte Lirio	8 14	1 37	7 24	
Fort Clayton	10 40	5 31	Gatun	8 29	1 52	7 39	
Corozal	10 45	5 35	Fort Davis	8 33	1 56	7 43	
Balboa Heights	10 50	5 40	Mount Hope	8 40	2 03	7 50	
Panama	10 55	5 45	Colon	8 45	2 10	7 55	
Arrive	A. M.	P. M.	Arrive	A. M.	P. M.	P. M.	

FORT RANDOLPH BRANCH STATIONS			
Daily.	Mixed pass and freight except Sunday.	Daily.	Mixed pass and freight except Sunday.
16	18	20	22
Leave	A. M.	P. M.	P. M.
Third Street	8 55	1 55	4 25
Colon	8 55	1 55	4 25
Seventh Street	8 55	1 55	4 25
Oriental Company	8 55	1 55	4 25
Tower Field	8 48	1 48	4 18
Coconut Station	8 35	1 35	4 04
Fort Randolph	8 30	1 30	4 00
Arrive	A. M.	P. M.	P. M.

DAILY.			
Daily.	Mixed pass and freight except Sunday.	Daily.	Mixed pass and freight except Sunday.
27	25	23	21
P. M.	P. M.	P. M.	P. M.
7 30	7 30	5 30	3 30
11 00	7 30	5 30	3 30
11 02	7 32	5 32	3 32
11 04	7 34	5 34	3 34
11 07	7 37	5 37	3 37
11 13	7 43	5 43	3 43
11 19	7 49	5 49	3 49
11 25	7 55	5 55	3 55
P. M.	P. M.	P. M.	P. M.

DAILY.			
Daily.	Mixed pass and freight except Sunday.	Daily.	Mixed pass and freight except Sunday.
27	25	23	21
P. M.	P. M.	P. M.	P. M.
7 30	7 30	5 30	3 30
11 00	7 30	5 30	3 30
11 02	7 32	5 32	3 32
11 04	7 34	5 34	3 34
11 07	7 37	5 37	3 37
11 13	7 43	5 43	3 43
11 19	7 49	5 49	3 49
11 25	7 55	5 55	3 55
P. M.	P. M.	P. M.	P. M.

All trains stop where time is shown.

26.05
R

Engineering

THE PANAMA CANAL RECORD



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3 1922

Volume XV.

Balboa Heights, C. Z., January 4, 1922.

No. 21.

Traffic in Calendar Year 1921.

The number of commercial ships which passed through the Panama Canal in the calendar year 1921 was 2,783, an average of 232 a month or 7.6 per day. In the year 1920 the number was 2,814, averaging 234.5 a month. The decrease was 31 ships for the year.

In net tonnage and tolls, however, the year 1921 exceeded 1920. Net tonnage amounted to 11,435,811 tons, Panama Canal measurement, as compared with 10,378,265 tons in the previous year. Tolls aggregated \$10,325,718.02 in 1921, compared with \$10,295,362.21 in 1920.

The cargo carried through the Canal in 1921 amounted to approximately 10,708,338 tons of 2,240 pounds. This figure is 527,771 tons less than the 11,236,119 tons that made the transit in 1920.

The decrease in the number of ships was 1.1 per cent. That in cargo was 4.7 per cent. The increase in net tonnage was slightly over one-half of 1 per cent, and that in tolls about three-tenths of 1 per cent.

Information Concerning the Canal.

Information concerning the Canal, the procedures in sending vessels through it, fuel, supply and repair facilities, charges, etc., is presented in publications of The Panama Canal which will be furnished promptly on request to The Panama Canal, Balboa Heights; Canal Zone, or Washington, D. C. The principal publications are on file in all American consular offices, from which all essential information may be secured by those who may find this more convenient than correspondence with The Panama Canal direct.

THE PANAMA CANAL RECORD is furnished without charge to steamship interests and consular officers, foreign as well as American. Any who are not now receiving it are invited to request it.

Tonnage Certificates.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., December 29, 1921.

CIRCULAR No. 673-1.

1. Effective February 1, 1922, a charge of \$50 will be made for original measurement of vessels which appear at the Canal without having been previously measured and without the necessary papers to show such measurement.

2. Delays and inconvenience incident to the measurement of vessels at the Canal may be avoided by vessels providing themselves with the proper certificate before their arrival in Canal waters, as outlined in the pamphlet entitled "Rules and Regulations for the Operation and Navigation of the Panama Canal; Sailing Directions; General Information."

JAY J. MORROW,
Governor.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, December 31, 1921.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.	
Helder	24	12 58	25	6 10	25	13 08	26	Dutch.	Royal Netherlands W. I. Mail.	362.0	52.0	17.0	Amsterdam.	Corral	General	2,782	5,117	3,807
Netheroy.	24	10 40	25	7 15	25	14 54	25	British.	Royal Mail Steam Packet Co.	450.0	58.0	17.3	London.	Portland	Ballast	8,874	6,558	
Parana	24	15 55	25	9 12	25	17 19	25	Danish.	Orient Steamship Co.	387.0	54.0	24.0	Antwerp.	Los Angeles	General	5,879	7,088	5,219
Bahia	22	16 07	25	8 53	25	15 55	25	American.	Colombian Maritime Co.	190.0	19.1	10.1	Cristobal.	Buenaventura.	Ballast	741	350	
Mejico Maru	25	8 20	25	11 10	25	18 24	25	Japanese.	Toyo Kisen Kaisha.	400.0	53.0	25.9	New York.	Yokohama	General	7,363	6,163	4,376
Tedeseke	25	8 48	25	12 05	25	19 32	25	British.	Hain Steamship Co.	400.2	52.1	23.9	Port Arthur.	Launceston	Case oil, etc.	6,500	5,769	4,328
Pruthi	25	15 55	26	6 28	26	15 05	26	British.	Edward Hain & Son.	400.0	53.0	23.6	New York.	Suva	Case oil	6,000	5,655	4,204
La Habra	25	22 52	26	7 35	26	16 37	26	Norwegian.	W. Wilhelmsen.	424.8	57.0	26.0	Tampico.	Tucupilla	Fuel oil	9,200	7,053	5,051
Cape Romain	25	23 25	26	8 35	26	17 35	26	American.	Atl. Gulf & Pac. Line (S. B.).	376.0	52.0	23.0	Baltimore.	Los Angeles.	General	5,600	5,142	3,568
Arcely	26	6 30	26	10 50	26	18 45	26	French.	Compagnie de Boleo	320.3	40.7	24.6	Tampico.	Santa Rosa, a	Crude oil.	3,200	3,141	2,096
Hattie Luckenbach	26	12 23	26	11 00	26	18 48	26	American.	Lukenbach Line.	331.0	47.0	25.3	New Orleans.	Los Angeles.	General	5,000	4,808	3,768
Limosa	26	2 25	26	12 50	26	19 52	26	British.	Anglo-Saxon Petroleum Co.	415.0	53.0	17.11	Southampton.	San Francisco	Ballast.	6,090	4,324	
Jufuku Maru.	27	6 13	27	6 45	27	14 36	27	Japanese.	Kokusai Kisen Kaisha.	382.0	51.0	26.9	Galveston.	Yokohama.	General	7,103	5,919	4,435
City of Vancouver.	27	7 38	27	17 11	27	22 10	27	British.	J. Courbhan & Sons	410.5	54.1	16.6	Liverpool.	Vancouver.	General	1,500	6,614	4,995
Elpenor.	27	6 43	27	12 45	27	18 41	27	British.	Alfred Holt & Co.	455.0	56.0	29.2	New York.	Yokohama.	General	6,818	7,881	5,402
Orni	27	20 32	28	6 43	28	13 36	28	British.	New Zealand Shipping Co.	460.7	60.2	27.0	London.	Dunedin	General	5,293	6,997	6,895
Serai Maru.	28	12 54	28	7 43	28	15 21	29	Japanese.	Tokoku Steamship Co.	435.0	53.0	23.0	Norfolk.	Portland	Ballast	7,164	5,145	
Husso	26	13 00	29	6 30	29	13 37	29	Chilean.	Chilean Steamship Line	378.0	44.0	22.0	Cristobal.	Valparaiso	General	950	4,592	3,182
Orana	26	15 55	29	7 10	29	15 29	29	British.	Pacific Steam Navigation Co.	465.0	55.0	25.6	Liverpool.	Catamel	General	2,262	8,693	5,345
Caddo	28	23 03	29	8 05	29	16 02	29	American.	Standard Oil Co.	414.5	55.0	13.6	New York.	Talana.	Ballast	6,437	4,442	
Newsonet	29	6 50	29	9 29	29	17 38	29	American.	Elmer Steel Steamship Co.	444.3	57.0	17.0	Hamburg.	Seattle	Ballast	7,893	5,613	
Melona	29	10 35	29	11 00	29	18 34	29	Norwegian.	Anglo-Saxon Petroleum Co.	418.5	55.0	26.0	Tampico.	Balboa	Crude oil	7,600	6,300	7,752
Boastad	29	7 05	29	12 00	29	19 25	29	American.	Giffre Steamship Co.	385.1	52.0	26.0	Boston.	Kobe	Cotton, etc	7,000	5,843	4,288
Eastern Cloud.	29	13 35	30	6 15	30	15 50	30	British.	Barber Steamship Line (S. B.).	389.0	51.0	24.1	New York.	Ilo Ilo	Case oil, general	7,739	6,242	4,471
Bessie Dollar.	30	6 50	30	7 25	30	16 59	31	British.	Robert Dollar Line	369.0	50.0	24.1	New York.	Yokohama.	Steel pipe, genl.	9,707	5,215	3,901
Tasmania Maru	30	6 55	30	8 55	30	17 02	30	Japanese.	Kokusai Kisen Kaisha	345.0	48.0	24.1	New Orleans	Yokohama.	General	5,082	4,215	2,936
Atlanta City	30	2 57	30	13 00	30	19 44	30	American.	United States Steel Products Co.	425.0	56.0	26.4	New York	Honolulu	Steel	8,562	7,550	4,448
Havara	34	13 50	31	6 30	31	15 18	31	British.	American-Hawaiian Line	406.8	51.1	21.2	Cristobal.	Los Angeles	General	2,782	6,069	4,480
Barima	20	15 35	31	7 30	31	15 12	31	British.	Pacific Steam Navigation Co.	220.0	37.0	13.0	Cristobal.	Champerico	General	800	1,634	571
Wangaratia.	30	20 07	31	8 45	31	16 35	31	British.	British-India Steam Nav. Co.	450.0	58.0	25.0	Cardiff	Austral a	General	1,738	8,283	5,227
Gabriel	31	10 05	31	10 55	31	13 02	2	American.	Oliver J. Olsen	225.0	43.0	16.0	North Shields	San Francisco	Coke	478	4,838	2,959
Manaro.	25	14 55	31	11 10	31	17 58	31	Peruvian	Peruvian Line	349.0	46.0	19.6	Cristobal.	Ilo Ilo	General	585	8,699	6,206
Mellic Prince.	31	12 42	31	11 55	31	19 52	31	British	Prince Line, Ltd	448.0	56.0	28.4	Boston.	Yokohama.	General	9,000	8,699	6,206

THROUGH THE CANAL—PANAMA TO ATLANTIC.

Montano	24	12 50	25	7 07	25	14 55	31	11 10	Peruvian	Peruvian Line	367 3	46 0	20 0	Callao	Cristobal	General	2,310	4,838	2,951
Eldorado	25	13 05	26	6 46	26	14 30	26	14 30	American	Western Transport Co	345 6	42 0	19 3	San Francisco	New Orleans	General	2,251	2,439	1,662
Huasco	25	13 05	26	6 46	26	14 30	26	14 30	American	South American Steamship Co	378 9	40 0	19 0	Talcahuano	Cristobal	General	338	4,552	3,182
Calagorite	25	17 45	26	8 59	26	17 03	26	20 25	British	Imperial Oil Co	462 4	60 2	27 0	Talara	London	Crude oil	10,440	8,491	6,096
Santa Teresa	25	10 45	26	12 09	26	18 35	26	22 46	American	W. R. Grace & Co	360 2	51 6	24 0	Talcahuano	New York	General	3,502	5,726	4,086
San Juan	26	13 15	27	7 43	27	15 00	27	15 00	American	Pacific Mail Steamship Co	283 0	37 0	24 0	San Francisco	Cristobal	General	522	2,379	1,593
Manavi	27	11 00	27	7 43	27	15 00	27	15 00	British	Pacific Steam Navigation Co	216 0	35 1	11 0	Guayaquil	Cristobal	General	170	1,357	884
Kinderyk	27	13 40	27	7 43	27	15 00	27	15 00	Dutch	Holland-American Line	470 0	58 0	27 0	Vancouver	Rotterdam	General	8,275	8,515	6,068
Cristobal	23	15 43	28	6 41	28	13 50	28	20 10	American	Panama Railroad Steamship Line	489 5	58 0	29 0	Balboa	Norfolk	Ballast	4,536	10,697	8,063
Oreoma	27	23 30	28	7 57	28	15 50	28	20 20	British	Pacific Steam Navigation Co	511 5	62 2	25 0	Valparaiso	Liverpool	General	7,496	7,470	5,618
Rob'n Adair	28	5 00	28	8 06	28	16 45	28	16 45	American	Seas Shipping Co	424 8	55 2	24 0	Seattle	Boston	General	6,948	7,445	5,345
Durban Maru	28	15 10	29	6 32	29	14 55	29	15 45	Japanese	Nippon Yusen Kaisha	420 0	56 0	23 0	Yokohama	New York	General	5,895	7,496	5,686
Jadden	29	5 00	29	7 52	29	16 05	29	16 35	American	Barber Steamship Lines (S. B.)	410 5	54 2	21 0	Cebu, P. I.	New York	General	5,698	5,567	4,296
Potosi	29	15 00	30	6 35	30	15 35	30	16 50	Br. (U.S.)	Pacific Steam Navigation Co	381 0	49 0	24 1	Valparaiso	Hull	General	5,732	5,760	3,866
Pear Branch	29	16 00	30	8 00	30	16 37	30	16 55	British	F. & W. Ritson	398 5	53 9	21 6	Valparaiso	Liverpool	Sugar, borate	3,816	4,718	3,359
Australford	29	23 45	30	8 45	30	16 49	31	6 13	British	Commonwealth Government Line	376 1	52 0	18 0	Levuka	London	Copra	8,000	11,487	8,732
Lewis Luckenbach	30	4 00	30	10 03	30	18 00	30	18 00	American	Luckenbach Line	496 0	63 2	25 0	San Francisco	New York	General, lumber	2,586	6,015	4,281
Colombia	30	4 07	30	12 46	30	19 44	31	16 17	American	Pacific Mail Steamship Co	380 0	48 7	21 7	San Francisco	Baltimore	General	2,586	6,015	4,281
Melona	29	18 24	31	7 12	31	14 25	31	14 25	Br. (U.S.)	Anglo-Saxon Petroleum Co	418 5	55 0	18 8	Balboa	Tampico	Ballast	6,300	3,752	3,752
Springfield	30	23 31	31	8 36	31	16 00	31	17 00	American	N. Atl. & Western S. S. Co. (S. B.)	410 5	54 2	21 6	Seattle	Boston	Lumber	5,666	6,576	4,971
Dakotan	31	9 31	31	12 07	31	19 30	31	23 45	American	American-Hawaiian Line	407 7	53 7	28 1	Seattle	Liverpool	General	6,766	7,156	5,058

* Lumber, dynamite, and general.

* Barley, borax, and nitrate.

* Dried fruit, borax, coffee, and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Dec. 25	Metapan	United Fruit Co	New Orleans via Habana.	Dec. 25	Metapan	United Fruit Company	Bocas del Toro.
Dec. 25	Gen. G. W. Goethals.	Panama Railroad Steamship Line	New York via Haiti.	Dec. 25	Stuyvesant	Royal Netherlands W. I. Mail	Puerto Colombia.
Dec. 26	Cartago	United Fruit Co	New Orleans.	Dec. 25	Haiti	French Line	Puerto Colombia.
Dec. 26	Achilles ⁴	Panama Railroad Steamship Line	Norfolk.	Dec. 26	Caribbean	Panama Railroad Steamship Line	Cartagena.
Dec. 27	Ulua	United Fruit Co	New York v'a Habana.	Dec. 26	Quibdo	A. & T. Mohk	Colon.
Dec. 27	Ulua	United Fruit Co	Bocas del Toro.	Dec. 27	Antonio Lopez	Spanish Line	Puerto Colomb ^a .
Dec. 28	Santa Marta	United Fruit Co	New York via Kingston.	Dec. 27	Ulua	United Fruit Co	New York via wayports.
Dec. 28	Sixola	United Fruit Co	Colombian ports.	Dec. 28	Metapan	United Fruit Co	New Orleans.
Dec. 28	St. Mihiel ⁵	United States Army	New York.	Dec. 29	Sixola	United Fruit Co	New York via Kingston.
Dec. 29	San Bruno	United Fruit Co	Boston via Port Limon.	Dec. 29	Santa Marta	United Fruit Co	New Orleans via Colombia.
Dec. 31				Dec. 29	Cartago	United Fruit Co	New Orleans via Bocas del Toro and Habana.

⁴ Collier.⁵ Transport.

(Continued on page 290, column 2.)

Financial Receipts and Disbursements, November, 1921.

BALBOA HEIGHTS, C. Z., December 29, 1921.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: Herewith is a report showing the commissary sales, financial receipts and expenditures, and of the cash balance available in The Panama Canal appropriations for the month of November, 1921, as compared with the preceding month, and with the corresponding month of last year:

	November, 1921.	October, 1921.	November, 1920.
Cash balance available for expenditure in Canal appropriations.....	\$12,255,599.42	\$12,780,832.78	\$15,634,339.64
Payments made from appropriations:			
By Paymaster on the Isthmus.....	1,024,183.32	1,049,994.95	1,584,678.48
By Disbursing Clerk, Washington.....	204,593.51	254,957.07	1,037,499.84
To Panama Railroad (for commissary books).....	200,700.36	208,320.59	348,053.87
Collections on the Isthmus:			
Repaid to appropriations.....	690,179.71	726,870.23	1,042,453.79
Commissary and other trust funds.....	202,245.56	210,858.14	349,975.69
Tolls.....	923,061.65	1,047,941.02	933,926.51
Sales of water.....	3,834.15	20,557.30	1,347.50
Postal receipts.....	9,365.99	9,025.95	9,411.20
Licenses, taxes, court fees, fines, etc.....	3,466.97	2,844.60	4,200.11
Total collections on the Isthmus.....	1,832,154.03	2,018,097.24	2,341,314.80
Collections by Disbursing Clerk, Washington, D. C.....	154,010.82	132,052.16	12,515.38
Deposits with Assistant Treasurer, United States.....	73,700.00	73,400.00	61,400.00
Canal Zone and miscellaneous funds:			
Receipts—			
Money order funds.....	123,412.13	126,062.88	164,123.04
Clubhouse funds.....	28,084.14	28,595.18	34,446.20
Trust funds.....	256.59		269.60
Interest.....	1,494.27	8,664.64	955.07
Total receipts.....	153,247.13	163,322.70	199,793.91
Disbursements—			
Money order funds.....	164,072.40	161,400.00	43,557.78
Clubhouse funds.....	30,228.60	23,781.54	30,234.90
Trust funds.....		78.09	1,947.39
Interest.....	706.71	723.83	357.99
Total disbursements.....	195,007.71	185,983.46	76,098.06
Pay roll on the Isthmus:			
Maintenance and operation.....	655,032.26	705,638.73	1,128,776.38
Sanitation.....	73,104.49	75,601.64	82,470.95
Civil Government.....	67,659.89	67,195.36	67,576.71
Total.....	795,796.64	848,435.73	1,278,824.04
Requisitions for purchases in the United States.....	32,881.37	342,056.95	501,765.49
Sales of commissary supplies:			
To The Panama Canal.....	81,989.73	93,018.98	130,757.23
To steamships, other than those of the United States Government and Panama Railroad.....	28,929.44	36,484.23	85,649.75
To the Panama Railroad, including its steamships and Hotel Washington.....	20,769.09	15,728.19	42,360.69
To the United States Government including the Army and Navy.....	90,652.00	93,962.85	102,526.81
To individuals and companies through charge accounts.....	24,274.56	24,475.48	26,259.97
To individuals purchasing coupons.....	319,944.39	345,908.19	557,882.68
Totals.....	566,559.21	609,577.92	945,437.03

Respectfully,

JAY J. MORROW,
Governor.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Notice to Mariners.—Savanilla Harbor.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., December 29, 1921.

To all concerned—The Colombian Government notifies this office as follows, under date of December 12, 1921:

"The bell buoy, exhibiting a fixed white light, at the head of the railroad wharf at Savanilla Harbor, has been replaced by a red gas buoy exhibiting an intermittent red light."

JAY J. MORROW,
Governor.

Northwestern Apples.

The steamship *Nebraska* of the Royal Mail Steam Packet Company passed through the Canal on January 2 with a cargo that included 140,000 boxes of apples under refrigeration, loaded at Victoria, Seattle, and Portland for Great Britain and the Continent.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending December 31, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
San Benito	United Fruit Co.	December 18.	December 18.	10	402
Abangares	United Fruit Co.	December 18.	December 18.	* 200	39
Honduras	French Steamship Line.	December 18.	December 19.	(*)	404
Parismina	United Fruit Co.	December 19.	December 22.	669	53
Pastores	United Fruit Co.	December 20.	December 21.	294	86
Targis	Roland Line.	December 20.	December 21.	117	(*)
Laura C. Hall	Pacific Metals Corp.	December 20.	December 21.	48	18
Merchant	Charente Steamship Co.	December 21.	December 22.	605	33
San Blas	United Fruit Co.	December 21.	December 22.	10	34
Eiger	Caribbean Steamship Line.	December 21.	December 22.	150	(*)
Abangares	United Fruit Co.	December 21.	December 21.	1	88
Virginie	French Steamship Line.	December 21.	December 23.	20½	(*)
Jamaica	Pacific Steam Navigation Co.	December 22.	December 22.	177	
Ulysses	Royal Netherlands W. I. Mail.	December 22.	December 23.	140	24
Haiti	French Steamship Line.	December 22.	December 22.	17	
Saint Joseph	French Steamship Line.	December 22.	December 24.	10	(*)
Balboa	Caribbean Steamship Line.	December 22.	December 22.	616	
Columbia	N. O. & S. A. Steamship Line.	December 22.	December 22.	258	105
Caribbean	Panama Railroad Steamship Line.	December 23.	December 23.	750	
Anna	Caribbean Steamship Line.	December 23.	December 24.	240½	(*)
Antonio Lopez	Spanish Steamship Line.	December 23.	December 23.	151	
Allianca	Panama Railroad Steamship Line.	December 24.	December 24.		1137
Camito	Elders & Fyffes, Ltd.	December 24.	December 24.	5	1
Salvador	Pacific Steam Navigation Co.	December 24.	December 24.	753	
Barima	Pacific Steam Navigation Co.	December 24.	December 24.	511	
Stuyvesant	Royal Netherlands W. I. Mail.	December 24.	December 24.	80	
Helder	Royal Netherlands W. I. Mail.	December 24.	December 24.	162	
Parana	Danish East Asiatic S. S. Co.	December 24.	December 25.		29
Haiti	French Line.	December 24.	December 25.		205
Stuyvesant	Royal Netherlands W. I. Mail.	December 24.	December 25.		448
Metapan	United Fruit Co.	December 25.	December 25.	½	(*)
Caribbean	Panama Railroad Steamship Line.	December 26.	December 26.		32
Antonio Lopez	Spanish Line.	December 26.	December 27.		594
Jamaica	Pacific Steam Navigation Co.	December 26.	December 28.		36
Gen. G. W. Goethals	Panama Railroad Steamship Line.	December 25.	December 30.	1,348	2,475
Mantaro	Peruvian Line.	December 25.	December 31.	2,310	579
Cartago	United Fruit Co.	December 26.	December 29.	1,107	283
Huasco	Chilean Line.	December 26.	December 29.	358	938
San Juan	Pacific Mail Steamship Co.	December 27.	December 27.	522	
Achilles	Panama Railroad Steamship Line.	December 27.	December 30.	12,054	(*)
Ulua	United Fruit Co.	December 27.	December 28.	313	64
Manavi	Pacific Steam Navigation Co.	December 27.	December 27.	170	
Santa Marta	United Fruit Co.	December 28.	December 29.	76	74
Metapan	United Fruit Co.	December 28.	December 28.	(*)	83
Ansaldo VI	National Navigation Society	December 30.	December 30.	83	
Columbia	Pacific Mail Steamship Co.	December 30.	December 31.	945	32
San Bruno	United Fruit Co.	December 31.	December 31.	40	35

* Pounds.

* No cargo discharged.

* No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending December 31, 1921.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Helder.....	Royal Netherlands W. I. Mail.....	December 25..	December 25..	252	
Huasco.....	Chilean Line.....	December 25..	December 25..	1	
San Juan.....	Pacific Mail Steamship Co.....	December 26..	December 27..	1	
San Joaquin.....	W. Wilhelmsen.....	December 29..		9,300	11
Melona.....	Anglo-Saxon Petroleum Co.....	December 29..	December 31..	7,600	
Colombia.....	Pacific Mail Steamship Co.....	December 30..	December 30..	141	1
Ansaldo VI.....	Societa Nazionale di Navigazione.....	December 31..	December 31..	19	

Ships at Canal Repair Shops.

The following is a report of the vessels and marine equipment at the Balboa shops for repairs during the week ended December 31:

Steamship *Cape May*, examine old telemotor and install new telemotor gear; U. S. S. *Neches*, weld water leg in No. 4 port boiler and calk seams on tube shaft.

PREVIOUSLY REPORTED.

Scows *No. 131*, dock and undock; scale and paint bottom; heavy repairs; *No. 141*, dock and undock; scale and paint bottom; slight repairs; grader *No. 3*, dock and undock; scale and paint bottom; slight repairs; scow *No. 139*, dock and undock; scale and paint bottom; heavy repairs; launch *No. 405*, installation of new engine bed and light repairs; motor ship *Chiralite*, heavy operation and miscellaneous repairs.

The following vessels were at the Cristobal shops for repairs during the week ended January 2:

Steamship *Salvador*, repair feed pump, ice machine, and circulating pump; overhaul windlass brakes; renew deck plates over galley and stokehold; rivet port side and forepart of saloon deck house; draw tail shaft for examination; repack stern gland; lift rudder and rebush gudgeons; repair tank tops; repair boiler, etc.; U. S. S. *Sciota*, repair anchor windlass; steamship *General G. W. Goethals*, calk main deck; braze 2 boiler feed pipes; barges *Nos. 105 and 109*, clean, scale, and paint; test all tanks; stop all leaks, etc.; steamships *Achilles*, manufacture new shaft for jacking gear; make 2 rods for steering engine; remetal and bore crank brasses for main engine, etc.; *San Juan*, remove L. P. go-ahead eccentric sheave; renew and fit new key in shaft and sheave; true up sheave and refit to shaft; repair after windlass and main circulator, etc.; *Manavi*, dock and undock; clean and paint; repair 2 derricks as directed, etc.; *Oriana*, *Santa Marta*, *Mantaro*, *Barima*, motor ship *Kennecott*, tug *Porto Bello*, and U. S. steamer *Nones*, minor repairs.

PREVIOUSLY REPORTED.

U. S. D. B. launch *L-53*, repair bulwarks, rudder head, shoe, lower fender, etc.; install copper patches on hull; overhaul reverse gear; true up pistons; overhaul magneto; overhaul air and bilge pump; test and repair tank, etc.; steamships *Balboa*, repair galley stove; scale boilers, etc.; *Jamaica*, install brackets and sheaves for steering chains.

A Small Landslide Erroneously Reported.

On November 15, 1921, persons resident near the village of Pacora, Republic of Panama, about 30 miles from the Pacific end of the Canal, reported a disturbance of the earth, and some reports were circulated that a volcano had appeared. The Governor of The Panama Canal despatched the Chief Hydrographer and the Chief of the Section of Surveys to investigate. They found that the disturbance was a land-

slide on the side of a steep mountain, involving the movement of not over 2,000 cubic yards of material and apparently a purely local and surface movement.

It was considered at the time that the incident was not worth mentioning in THE PANAMA CANAL RECORD. Erroneous newspaper stories were, however, published; and for the purpose of correction this note has been inserted.

Lithographic Prints of Canal and Panama Scenes.

To meet a demand at popular prices for reproductions of some of the views along the Canal and in Panama, The Panama Canal has had lithographic prints made from 10 official photographs which were colored by hand. The lithographs are in 10 colors and approximately 8 by 10 inches in size, and are mounted on mats about 12 inches wide by 13 inches long, of several styles. They are being sold for 55 cents, or \$5 for the set of 10. The prints may also be purchased unmounted, at 40 cents each or \$3.50 for the set. On the Isthmus they are being sold by the Bureau of Clubs and Playgrounds, and in the United States by The Panama Canal, Washington, D. C. Orders will be accepted by mail and delivered, postage prepaid, on payment of prices as above.

The views are of Gatun, Pedro Miguel and Miraflores locks, with vessels in passage; two of parts of Gaillard Cut; the town and inner harbor at Balboa; a battleship in Gatun Lake; the Cathedral and Plaza, Panama; the tower of the Cathedral in Old Panama; and the bay and village of Taboga.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective January 1, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.29
Brass, sheet, average.....	Lb.	.40
Bronze, Tobin, average.....	Lb.	.31
Gasoline, motor grade.....	Gal.	.40
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.175
Oakum, Navy, unspun.....	Lb.	.175
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.25
Oil, engine, gas, light, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.675
Oil, engine, gas, heavy, in barrels.....	Gal.	.65
Oil, engine, gas, extra heavy, in cases.....	Gal.	1.125
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.55
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.16
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.10
Soda, ash.....	Lb.	.04
Waste, cotton, colored.....	Lb.	.175
Waste, cotton, white.....	Lb.	.20

0.05

Engineering

THE PANAMA CANAL RECORD

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Volume XV. Balboa Heights, C. Z., January 11, 1922. No. 22.

Supplement No. 8 to Tariff No. 5.—Tolls.—Pilotage.—Electric Current.— Measurement of Vessels.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., December 30, 1921.

ITEM 2.—TOLLS.

(Effective November 17, 1921, by Executive Order.)

7. Vessels transiting the Panama Canal from Cristobal to Balboa and return for the sole purpose of having repairs made at the Balboa dry dock and shops will be exempt from payment of tolls.

ITEM 3.—PILOTAGE.

(Effective November 17, 1921, by Executive Order.)

4. There is no charge for transit pilotage, except for vessels transiting the Canal from Cristobal to Balboa and return for the sole purpose of having repairs made at the Balboa dry dock and shops, in which case a charge for pilotage will be made upon the maximum draft in salt water; rate per foot, or fraction thereof, provided such fraction equals or exceeds 6 inches. each way.. \$5.00

ITEM 41.—ELECTRIC CURRENT.

(Effective January 1, 1922.)

1. For metered current consumed by individuals (nonemployees) and companies in the Canal Zone and by employees of The Panama Canal and Panama Railroad Company for commercial use:
- | | | |
|--------------------------|-------------|--------|
| First 100 KWH | per KWH.. | \$0.08 |
| Next 200 KWH | per KWH.. | .06 |
| Over 300 KWH | per KWH.. | .04 |
| Minimum charge | per month.. | 1.00 |
2. For unmetered current consumed by any interest or activity a rate of one-half cent (\$.005) per month for each watt of attached load, with a minimum charge of \$1 per month.
3. All services involving attached loads in excess of 1,000 watts shall be metered.
4. All services of any size in which the Electrical Engineer may determine that conditions are such that this flat rate method of charges is not reasonably applicable shall be metered.
5. Above rates do not include lamp renewals or repairs to appliances.

ITEM 42.—MEASUREMENT OF VESSELS.

(Effective February 1, 1922.)

- For making an original measurement of a vessel to determine its Panama Canal tonnage and issuing a certificate thereof. \$50.00

JAY J. MORROW,
Governor, The Panama Canal.
President, Panama Railroad Company.

Notice to Mariners.—Obstructions to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., January 5, 1922.

The master of the steamship *Argosy* has advised by radio that he passed at 1.55 p. m., January 4, at Lat. 9° 46' N. and Long. 79° 52' W., a wreck, showing a stump of a mast about 5 feet above water.

The U. S. S. *Galveston* reports: Warning—Shoals discovered and surveyed, Corinto Harbor, Corinto, Nicaragua. Center of 16-foot shoal, 75 yards in diameter. Carden headlight, bearing 286° true, distance 660 yards.

JAY J. MORROW,
Governor.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, January 7, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Ansaldo VI	30	13	10	1	6	38	1	14	36	Italian Line	393.6	51.6	17.0	Genoa	Valparaiso	General	807	5,453	3,526
Dakar Maru	1	6	23	1	7	30	1	13	17	Nippon Yusen Kaisha	420.0	56.0	27.7	New York	Shanghai	Steel sheets, etc.	8,728	7,290	5,154
Munio	1	4	19	1	9	15	1	16	55	Munio Steamship Corporation	333.6	43.2	23.1	Mobile	San Diego	Steel pipe	5,300	4,165	3,066
Denver	1	10	28	1	11	28	1	17	35	United States Navy	292.0	44.0	17.0	Liberia	Balboa				
Solana	1	9	40	1	12	17	1	19	38	Pacific Mail Steamship Co.	419.5	56.5	26.0	Tampico	Iquique	Fuel oil	9,000	7,043	5,045
Nereus	1	6	12	2	6	15	2	14	50	United States Navy	501.0	62.1	31.7	Hampton Rds.	San Diego	Coal and general	10,437	6,759	4,900
West Isleta	1	17	43	2	7	40	2	16	38	Naweco Line (S. B.)	409.8	54.2	22.0	New York	Los Angeles	General	2,321	4,593	3,381
Kennecott	1	17	58	2	8	15	2	16	40	United States Navy	345.3	49.6	19.0	New Orleans	Los Angeles	General	4,000	4,872	1,227
Andalusia	1	11	14	2	8	20	2	17	48	Alaska Steamship Co.	236.0	37.0	18.1	New York	Valparaiso	General	1,943	1,872	1,227
Dodra	1	23	19	2	9	00	2	17	47	Swedish	376.0	51.0	19.1	Quebec	Seattle	General	3,637	5,158	3,813
Lady Evelyn	27	16	02	2	9	32	2	18	56	Barber Steamship Line	189.0	26.1	11.2		Vancouver	Ballast		646	183
Edgar F. Lucke										Robert Thompson Dinahon									
Lockenbach	2	7	40	2	10	53	2	19	02	Lockenbach Line	425.0	57.3	23.0	New York	San Francisco	General	5,000	8,568	6,696
Euler	1	5	48	2	11	40	2	20	01	Pacific Mail Steamship Co.	380.0	48.7	23.6	Baltimore	San Francisco	General	1,752	5,926	4,178
Chateau	2	10	56	2	12	52	2	21	03	Nautilus Steamship Co.	380.3	49.7	18.8	Newcastle-on-Tyne	Valparaiso	General	2,356	4,905	3,622
Therapy	2	22	51	3	7	20	3	13	34	United States Army	448.0	58.0	26.0	New York	Honolulu	Army supplies	3,649		
Apple Branch	2	17	38	3	11	03	3	17	29	Nautilus Steamship Co.	370.0	52.0	18.1	Liverpool	Valparaiso	General	1,417	5,112	3,511
Maravi	27	19	10	4	6	05	4	14	26	Pacific Steam Navigation Co.	216.0	35.0	12.5	Cristobal	Guayaquil	General	224	1,357	884
San Juan	27	15	00	4	6	19	4	14	26	Pacific Mail Steamship Co.	283.0	37.0	18.8	Cristobal	San Francisco	General	1,889	2,379	1,593
Santa Luisa	3	15	32	4	7	40	4	15	16	W. R. Grace & Co.	360.2	51.6	21.1	New York	Valparaiso	General	2,122	3,969	2,945
Tordenskjold	3	11	40	4	8	47	4	15	03	W. Wilhelmssen	385.0	48.0	23.6	Matanzas	Shanghai	Sugar	5,100	5,369	2,945
Somerseset	4	11	55	4	12	15	4	19	02	Federal Steam Navigation Co.	460.6	62.8	28.0	London	Auckland	General	6,684	9,943	7,530
Koebehavn	4	12	12	4	14	52	5	15	09	East Asiatic Steamship Co.	361.9	49.2	24.0	Copenhagen	Los Angeles	General	4,800	4,028	3,289
Argosy	4	16	58	5	6	20	5	16	00	Wessel Duval & Co. (S. B.)	390.0	54.0	20.2	New York	Salaverry	General	2,155	6,161	4,425
Patuxent	10	15	53	5	6	15	5	17	06	United States Navy	300.0	48.0	22.6	Cristobal	Balboa	Coal, general	5,407	7,442	3,524
Welsam	4	11	48	5	7	18	5	18	47	Vinke & Co.	360.0	48.0	22.6	Cardiff	Honolulu	Coke	397	1,824	1,103
Christine	4	13	10	5	7	22	5	17	22	O. J. Olson	221.9	43.0	18.0	Dunkirk	San Francisco				
Mongolian																			
Prince	5	6	45	5	8	17	5	18	21	Prince Line, Ltd	423.5	56.0	17.0	Havre	Vancouver	General	2,500	6,469	4,735
Henry S. Grove	5	5	11	5	9	00	5	19	21	All Gulf & Pac. Steamship Co.	404.6	51.0	27.2	Baltimore	Los Angeles	General	7,503	6,755	4,688
San Francisco	5	6	50	5	11	00	5	20	33	United States Steel Products Co.	405.0	52.0	26.4	Mobile	Kobe	Steel rails	7,170	6,186	4,449
Henry D.																			
Whiton	5	6	20	5	11	40	5	21	35	Union Sulphur Co.	356.0	51.4	25.2	Sabine	Los Angeles	Sulphur	6,800	5,367	2,925
Canadian Victor	5	8	37	5	12	40	5	22	23	Canadian Government	400.0	52.4	24.7	St. John, N. B.	Tacnao	General	5,279	5,936	4,160
Jamaica	4	5	46	6	6	05	6	14	01	Pacific Steam Navigation Co.	220.0	34.0	12.6	Pro. Colombia	Auckland	General	490	1,187	622

Crusier.

Collier.

Motor ship.

Transport.

Auxiliary bark.

Aug.

*Tuz.

* Auxiliary bark.

* Transport.

* Motor ship.

* Collier.

* Cruiser.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.—continued.

	3	20	40	6	6	10	16	06	7	20	45	British	Pacific Metals Corporation.	81	0	26	0	9	0	Cristobal	Buenaventura.	General	3	132	72
Laura C. Hall ⁷	6	9.55	6	10.24	6	16.54	6	16.54	6	20.33	6	20.33	British.	Alfred Holt & Co.	392	0	49	0	16	9	Seattle	General	2 982	5 450	3 459
Mennon.	2	9.40	6	12.55	6	20.26	6	20.26	6	21.40	6	21.40	American	United States Navy	514	0	65	0	31	0	Hampton Rds.	Coal	10 099		
Jason ⁷	7	4.25	7	6.55	7	14.46	7	14.46	7	15.55	7	15.55	American	American-Hawaiian Line.	407	7	53	7	23	0	Boston	General	4 000		
Panama.	7	7.00	7	7.55	7	17.15	7	17.15	7	18.22	7	18.22	British	Commonwealth and Don. Line.	426	0	54	1	22	0	Tacoma.	General	4 014		
Port Lincoln.																				London.	Sydney				

⁷ Motor schooner.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

	29	16	10	1	6	53	1	15	41			American	Howard Lumber Co.	187	3	38	0	16	7	San Mig'l Bay	New Orleans	Logs	1,100	866	730
Irene S. Wilkinson.	31	22	32	1	7	56	1	17	00	4	14	43	Panama Railroad Steamship Line	356	4	45	3	19	5	Guayaquil	New York	General	1,781	4,503	2,764
General O. H. Ernst.	2	2	00	2	8	10	2	14	58	2	14	58	New Zealand Shipping Co.	450	0	58	0	24	6	Wellington	London	C. S. and general	6,000	8,459	6,060
Piako.	2	3	00	2	8	37	2	16	35	2	20	35	British-India Steam. Nav. Co.	449	5	58	2	23	6	Portland	London	(s)	7,500	8,334	5,353
Woodarra.	2	6	30	2	9	49	2	18	10	2	23	20	Royal Mail Steam Packet Co.	450	0	58	0	22	4	Portland	London	General	5,000	8,878	6,588
Nelraska.	2	10	10	2	12	12	2	19	22	2	23	20	Atl. Gulf & Pacific S. S. Corp.	409	6	54	1	24	0	Tacoma	New York	Lumber, general	8,004	6,665	5,020
West Haven.	29	21	45	3	7	05	3	14	37	3	19	40	Willams Steamship Co.	425	4	57	1	26	0	Port San Luis	Tampico.	Ballast	6,690	7,983	5,882
San Joaquin.	3	8	05	3	9	02	3	16	14	4	5	55	Pacific Metals Corporation.	434	3	57	7	22	6	Seattle	New York	General	7,14	132	72
Wilso.	2	20	30	3	12	57	3	20	40	6	6	10	Kokusei Kisen Kaisha.	385	0	51	0	23	0	Buenaventura.	Cristobal.	Gold, platinum	6,000	5,956	4,460
Laura C. Hall.	4	22	15	5	7	45	5	15	45	5	16	17	Pacific Steam Navigation Co.	361	0	46	0	19	0	Fraser Mill	Chatham.	Lumber	1,683	4,742	3,023
Tokutoku Maru.	5	1	30	5	9	42	5	16	17	6	16	35	Holland-American Line.	469	7	58	3	22	6	Guayaquil	New York	General	6,376	8,514	6,006
Quilpu.	5	10	45	5	11	34	5	18	55	5	19	48	N. A. & Western S. S. Co. (S. B.)	390	0	54	2	22	6	San Pedro	Portland, Me.	Lumber, general	5,537	6,161	4,426
Femidijk.	5	22	30	6	7	49	6	15	16	6	16	35	Roland Line.	377	6	50	8	23	2	Seattle	Hamburg	(s)	5,900	4,791	3,374
Artigas.	5	22	30	6	8	04	6	15	16	6	17	58	American-Hawaiian Line	405	6	58	2	26	0	Corral	New York	General	7,951	7,151	4,750
Roland.	6	1	30	6	13	32	6	21	20	6	21	20	Pacific Steam Navigation Co.	491	5	58	2	26	0	Valparaiso	London	General	4,000		
Lobos.	6	22	30	6	7	41	7	15	30	7	18	40	United States Navy	356	0	54	2	21	0	Seattle	New York	General	6,800	5,945	4,561
Patuxent ⁶	5	17	06	7	7	46	7	15	12	7	19	35	U. S. & A. Lines (S. B.)	385	0	24	0	15	0	Balboa	Cristobal.	Lumber	5,000	5,668	4,297
Eastern.	7	2	00	7	8	25	7	16	55	7	18	00	Munson Steamship Co.	370	0	53	2	23	6	Melbourne.	New York	General	691	3,666	2,577
Mundekta.	7	6	00	7	9	33	7	17	35	7	18	00	Chilean Line	350	0	42	1	23	6	Seattle	Cristobal.	General	3,000	8,199	6,250
Palena.	7	2	45	7	11	57	7	18	45				Atl. Gulf & Pacific S. S. Co.	410	0	56	0	19	6	Valparaiso	New York	(1 ^o)			
Liberator.	7	13	30	7	14	00	7	20	33	7	20	50								Portland	New York				

⁶ Fresh, dried, and canned fruit.⁹ Nitrate, bran, beans, metals, sugar, hides, wool, honey, glue, and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

Date.	Vessel.	*ARRIVALS.		*DEPARTURES.		For—
		Line.	From—	Date.	Vessel.	Line.
Jan. 1.	Atenas.	United Fruit Co.	New Orleans via Habana.	Jan. 1.	Atenas	United Fruit Co.
Jan. 1.	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.	Jan. 2.	Van Rensselaer	Royal Netherlands W. I. Mail.
Jan. 1.	Van Rensselaer	Royal Netherlands W. I. Mail.	Amsterdam.	Jan. 4.	Zacapa	United Fruit Co.
Jan. 2.	Zacapa.	United Fruit Co.	New Orleans.	Jan. 4.	Atenas	United Fruit Co.

(Continued on page 298, column 2.)

Commercial Traffic Through the Panama Canal in December, 1921, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of United States to Far East:</i>							<i>Long tons.</i>
Japanese.....	10	37,968	43,382	57,231	37,366	\$46,958.75	67,645
British.....	0	36,278	44,494	54,047	34,244	45,347.50	61,809
United States.....	6	22,386	29,963	36,132	22,374	27,982.50	48,953
Swedish.....	1	4,122	5,226	6,565	4,804	5,152.50	9,188
Norwegian.....	1	4,061	4,288	4,607	2,856	5,076.25	7,000
Totals.....	27	104,815	127,353	158,582	101,644	130,517.50	194,595
<i>United States coastwise:</i>							
United States.....	20	85,359	104,152	128,569	83,385	106,549.80	73,967
<i>From Europe to west coast of United States:</i>							
British.....	6	22,241	28,358	32,460	20,225	24,356.09	13,165
Norwegian.....	3	12,175	14,572	17,758	11,816	15,218.75	17,001
United States.....	3	7,856	8,795	11,394	7,542	6,880.11	478
Japanese.....	2	7,329	7,837	10,854	6,733	8,982.30	.....
French.....	1	3,638	4,170	5,796	3,689	4,547.50	360
Totals.....	15	53,239	63,732	78,262	50,005	59,984.75	31,004
<i>From Europe to west coast of South America:</i>							
British.....	4	15,015	18,419	25,366	15,340	18,768.75	9,190
German.....	2	6,768	7,575	8,663	5,391	8,218.35	5,433
Danish.....	2	6,316	7,396	9,281	5,929	7,772.35	8,616
Dutch.....	2	4,236	6,927	6,832	4,218	5,205.00	4,400
Swedish.....	1	3,430	5,533	5,524	4,225	4,287.50	950
French.....	1	3,147	3,980	5,330	3,462	3,933.75	400
Totals.....	12	38,912	49,830	60,996	38,565	48,275.70	28,989
<i>From east coast of United States to west coast of South America:</i>							
United States.....	6	18,897	24,109	30,191	18,605	21,031.03	6,195
British.....	3	9,333	13,637	16,688	9,856	11,666.25	7,100
Norwegian.....	1	866	999	1,406	875	1,082.50	18
Totals.....	10	29,096	38,745	48,285	29,336	33,779.78	13,313
<i>From Cristobal, C. Z., to west coast of South America:</i>							
British.....	4	1,325	1,720	2,391	1,465	1,656.25	298
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	757
United States.....	2	672	700	1,230	744	672.00	84
Chilean.....	1	1,811	3,182	3,798	2,272	2,263.75	950
Totals.....	9	6,527	10,947	16,439	8,998	7,990.75	2,089
<i>From Europe to Australasia:</i>							
British.....	8	44,400	56,151	70,346	44,623	55,500.00	40,269
<i>From United States to Australasia:</i>							
British.....	4	15,788	17,796	21,172	14,183	19,301.35	22,011
United States.....	1	4,309	4,950	6,848	4,280	5,386.25	5,419
Totals.....	5	20,097	22,746	28,020	18,463	24,687.60	27,430
<i>From Europe to west coast of Canada:</i>							
British.....	2	7,029	8,784	10,304	6,467	8,786.25	5,888
Dutch.....	1	4,474	6,911	7,310	4,495	5,592.50	5,466
Danish.....	1	3,378	5,219	5,497	3,425	4,222.50	5,879
Totals.....	4	14,881	20,914	23,111	14,387	18,601.25	17,233
<i>From Cristobal, C. Z., to west coast of Central America:</i>							
British.....	3	2,164	2,448	4,202	2,272	2,705.00	1,584
<i>From Mexico to west coast of South America:</i>							
British.....	1	4,645	5,311	7,270	4,513	5,806.25	9,300
Norwegian.....	1	4,407	5,051	7,022	4,438	5,508.75	9,200
Totals.....	2	9,052	10,362	14,292	8,951	11,315.00	18,500
<i>From east coast of South America to west coast of United States:</i>							
United States.....	1	3,522	4,914	5,652	3,522	4,402.50	5,471
Norwegian.....	1	3,260	3,293	4,019	2,598	3,951.60	3,000
Totals.....	2	6,782	8,207	9,671	6,120	8,354.10	8,471

ATLANTIC TO PACIFIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of United States to Gatun Lake:</i>							<i>Long tons.</i>
United States.....	2	5,036	5,751	6,533	5,241	\$4,234.86	
<i>From Europe to west coast of Central America:</i>							
German.....	1	1,225	1,320	1,928	1,136	1,531.25	741
British.....	1	847	994	1,495	917	715.68	
Totals.....	2	2,072	2,314	3,423	2,053	2,246.93	741
<i>From east coast of United States to Balboa, C. Z.:</i>							
United States.....	1	7,216	8,063	9,604	7,027	9,020.00	9,677
<i>Foreign ship in ballast between United States coastwise ports:</i>							
Japanese.....	1	5,070	5,415	6,783	4,988	6,337.50	
<i>From east coast of Canada to west coast of South America:</i>							
British.....	1	5,166	6,096	8,764	5,511	4,389.12	
<i>From Europe to Far East:</i>							
Swedish.....	1	4,489	5,346	5,788	4,300	5,611.25	7,597
<i>From east coast of Canada to Australasia:</i>							
British.....	1	4,403	5,494	7,178	4,413	5,503.75	5,155
<i>From east coast of Mexico to west coast of United States:</i>							
United States.....	1	4,206	4,903	6,752	4,206	5,257.50	11,000
<i>From east coast of South America to Far East:</i>							
Japanese.....	1	3,684	4,241	5,850	3,642	4,605.00	3,934
<i>From east coast of Mexico to Balboa, C. Z.:</i>							
British.....	1	3,407	3,752	5,948	3,714	4,258.75	7,600
<i>From West Indies to Balboa, C. Z.:</i>							
British.....	1	3,255	3,714	5,631	3,230	4,068.75	7,943
<i>Mexican coastwise:</i>							
French.....	1	2,155	2,096	2,953	1,880	2,515.20	3,200
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	1	1,862	2,206	3,169	1,862	2,327.50	2,500
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	319
<i>Miscellaneous:</i>							
Panamanian.....	1	69	69	123	72	51.75	
British.....	1	(¹)	(¹)	(¹)	(¹)	2,308.00	
Totals.....	2	69	69	123	72	2,359.75	
Totals, December, 1921.....	135	468,028	575,669	720,502	459,490	571,743.49	517,110
Totals, November, 1921.....	123	431,267	539,017	671,741	429,608	528,209.07	386,681
Totals, December, 1920.....	145	449,204	554,932	698,602	441,336	554,809.41	619,451

PACIFIC TO ATLANTIC.

<i>United States coastwise:</i>							
United States.....	23	94,345	116,482	144,322	94,389	\$117,600.08	105,134
<i>From west coast of South America to Europe:</i>							
British.....	12	48,218	59,550	76,238	48,410	60,272.50	72,858
Dutch.....	2	3,560	5,819	5,880	3,576	4,450.03	8,911
French.....	1	4,219	4,932	6,669	4,224	5,273.75	7,143
German.....	1	3,878	4,704	6,149	3,941	4,847.50	6,014
Danish.....	1	3,127	4,090	4,950	3,163	3,908.75	6,328
Chilean.....	1	2,754	3,442	5,961	2,981	3,442.50	3,118
Spanish.....	1	2,414	2,898	3,812	2,771	3,017.50	4,830
Totals.....	19	68,170	85,435	109,659	69,066	85,212.50	109,202
<i>From west coast of United States to Europe:</i>							
United States.....	5	21,851	28,201	35,193	21,895	27,313.75	40,221
British.....	4	15,575	19,287	22,959	14,449	19,256.90	29,830
Norwegian.....	1	4,523	5,627	7,093	4,479	5,653.75	8,896
Japanese.....	1	3,422	4,277	5,460	3,365	4,277.50	6,687
Danish.....	1	3,368	5,263	5,497	3,425	4,210.00	6,178
Totals.....	12	48,739	62,655	76,202	47,613	60,711.90	91,812

* British cruiser of 4,616 tons displacement.

PACIFIC TO ATLANTIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From west coast of South America to east coast of United States:</i>							<i>Long tons.</i>
United States.....	4	8,790	11,462	15,098	8,975	\$10,987.50	9,144
British.....	3	12,885	15,315	18,416	11,110	15,860.25	11,953
Japanese.....	1	4,468	4,524	6,097	4,454	5,428.80	7,416
Swedish.....	1	1,091	1,227	1,825	1,282	1,363.75	2,121
Norwegian.....	1	973	1,179	1,631	975	1,216.25	1,025
Totals.....	10	28,207	33,707	43,067	26,796	34,856.55	31,659
<i>From west coast of South America to Cristobal, C. Z.:</i>							
British.....	4	1,811	2,532	3,321	1,980	2,263.75	1,707
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	4,155
United States.....	2	672	700	1,230	744	840.00	1,236
Chilean.....	1	1,811	3,182	3,798	2,272	2,263.75	338
Totals.....	9	7,013	11,759	17,369	9,513	8,766.25	7,436
<i>From Australasia to Europe:</i>							
British.....	5	26,783	31,395	41,486	27,182	33,301.50	32,981
<i>From Far East to United States:</i>							
United States.....	3	11,705	14,877	17,677	12,337	14,631.25	15,511
Japanese.....	2	7,851	9,695	12,915	7,924	9,813.75	12,671
Totals.....	5	19,556	24,572	30,592	20,261	24,445.00	28,182
<i>From west coast of United States to east coast of Mexico:</i>							
British.....	1	8,029	8,130	10,831	7,529	6,021.75	.....
United States.....	1	4,206	4,903	6,752	4,205	3,530.16	.....
Totals.....	2	12,235	13,033	17,583	11,734	9,551.91	.....
<i>From west coast of Canada to Europe:</i>							
Dutch.....	1	4,860	6,068	7,651	4,796	6,075.00	8,275
French.....	1	4,326	4,363	5,923	3,763	5,253.60	3,641
Totals.....	2	9,186	10,431	13,574	8,559	11,328.60	11,916
<i>From Balboa, C. Z., to east coast of Mexico:</i>							
British.....	2	6,662	7,466	11,579	6,944	5,375.52	.....
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	2	3,194	3,799	5,322	3,171	3,992.50	911
<i>From west coast of Central America to Cristobal, C. Z.:</i>							
British.....	2	1,401	1,577	2,731	1,463	1,751.25	632
<i>From Balboa, C. Z., to east coast of United States:</i>							
United States.....	1	7,216	8,063	9,332	7,071	5,805.36	.....
<i>From west coast of Canada to east coast of United States:</i>							
United States.....	1	5,203	5,624	6,861	5,122	6,503.75	7,284
<i>From west coast of South America to east coast of Mexico:</i>							
Norwegian.....	1	4,407	5,051	7,022	4,438	3,636.72	.....
<i>From Australasia to east coast of United States:</i>							
British.....	1	3,475	4,127	5,448	3,336	4,343.75	1,347
<i>From Australasia to east coast of Canada:</i>							
British.....	1	3,255	4,094	5,404	3,331	4,068.75	3,200
<i>From Far East to West Indies:</i>							
British.....	1	2,743	3,622	4,435	2,909	3,428.75	3,000
<i>Mexican coastwise:</i>							
French.....	1	2,155	2,096	2,953	1,880	1,616.25	.....
<i>From west coast of Central America to Europe:</i>							
German.....	1	1,118	1,361	2,064	1,182	1,397.50	500
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	131
<i>Local—Balboa to Cristobal, C. Z.:</i>							
United States.....	1	3,448	4,417	5,667	4,192	3,180.24	.....
Panamanian.....	1	187	187	187	187	233.75	526
Totals.....	2	3,635	4,604	5,854	4,379	3,413.99	526
Totals, December, 1921.....	104	350,312	441,575	563,997	360,941	431,854.78	435,943
Totals, November, 1921.....	99	322,430	403,394	512,416	323,278	394,839.63	468,756
Totals, December, 1920.....	120	383,203	472,080	600,262	382,422	453,039.91	457,088

Reductions in Freight Rates.

The Panama Railroad Steamship Line has made the following changes in rates from New York to Cristobal or Colon, under Circular No. 756-160:

Bran, 50 cents per 100 pounds, formerly 64 cents; cement, building, 20 cents per 100 pounds, formerly 32 cents.

Changes in the rates from New York to Panama City have been made, under Circular No. 756-159, as follows:

Sulphur, 29 cents per cubic foot or 58 cents per 100 pounds, formerly 93 cents per cubic foot or \$1.86 per 100 pounds; cement, building, 35 cents per 100 pounds, formerly 48 cents.

In addition to the rates quoted above, the Isthmus transfer charge of \$1 per ton of 40 cubic feet or 2,000 pounds, will be assessed on all shipments except building cement.

Hamburg-American Line Service to Central America.

The Hamburg-American Line is beginning a service through the Canal, to the west coast of Central America. The steamer *Antiochia*, of 3,100 gross tons, is due to arrive at Cristobal on January 13, from Hamburg via Bremen, Curacao, La Guaira, Puerto Cabello, Puerto Colombia, and Cartagena. After handling cargo at the Canal ports she will proceed up the west coast as far as Champerico, Mexico, calling at one port of each of the Central American countries on the way, and returning to Balboa within about a fortnight of her passage through the Canal.

No advice has been received as to the probable frequency of the service.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended January 7:

Tug *Mariner*, dock and undock; stage and clean; scale bottom and paint bottom up to 6-foot draft line; conversion of tug from coal burner to oil burner, with the necessary alterations to bulkheads, installation of tanks, boiler fronts, fuel oil heaters, pipe and burners; steamship *Lompoc*, scale and clean all boilers for inspection; general repairs to circulating pump engine and miscellaneous repairs in engineer's department; lower boot-topping line; paint hull below boot-topping line to draft line 1 coat of antifouling; scows *No. 226*; dock and undock; stage and clean; scale bottom and paint bottom up to 6-foot draft line; 2 coats of anticorrosive and 1 coat of antifouling; redrive or weld all loose rivets and weld leaky seams below water line; *No. 140*; dock and undock; stage and clean; scale bottom and paint bottom up to 6-foot draft line; 2 coats of anticorrosive and 1 coat of antifouling; test all tanks; redrive loose rivets; weld leaking seams below water line; renew 2 bits.

The following vessels were at the Cristobal shops for repairs during the week ended January 9:

Steamships *Gen. W. C. Gorgas*, braze whistle pipe; repair shroud turnbuckles; install ladder in hold; renew covering on deck winch steam lines, etc.; *Caribbean*, change worm gear on steering engine; manufacture 12 clips for cattle pens; repair springs for dynamo, etc.; barges *No. 118* and *119*, scrape, scale, and paint bottom; test all tanks; stop all leaks; renew rivets where necessary; U. S. S. *O-15*, renew foundation plate for motor room hatch and install hatch; motor ship *Laura C. Hall*, rebabbitt bearings; repair exhaust pipe, etc.; U. S. oil barge *No. 11*, overhaul pumping engine; clean and paint bottom; renew hatch gasket; calk rivets; grind in suction and discharge valves; repair fender, etc.; steamships *Teviot*, make new bull ring and 8 snap rings; rebore H. P. cylinder, etc.; *Quillota*, overhaul coaling gear; repair M. P. crank pin oil pipe, etc.; *Gen. O. H. Ernst*, *Panamá*, *Acajulla*, *Sarpfos*, and U. S. steamer *Nones*, minor repairs.

Hours of Departure of Passenger Trains.

Following are the hours of departure of the passenger trains of the Panama Railroad running between the Atlantic and the Pacific:

From Colon: 9.10 a. m., 12.15 p. m., 4 p. m.

From Panama: 7 a. m., 12.15 p. m., 6.10 p. m.

The trains leaving at 12.15 p. m. do not run on Sundays and holidays; the others are daily.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line), Pacific Mail Steamship Company, and Matson Line. The two last named charge \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Typewriters For Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, S. D., Administration Building, Balboa Heights.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Current Net Prices on Coal, Fuel Oil, and Diesel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

MOVEMENTS OF OCEAN VESSELS—Continued from page 293.**PORT OF CRISTOBAL—continued.**

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Jan. 2	Caribbean	Panama Railroad Steamship Line.	Cartagena.	Jan. 4	Tolosa	United Fruit Co.	New York via wayports.
Jan. 3	San Gil	United Fruit Co.	Boston via Habana.	Jan. 5	San Gil	United Fruit Co.	Boston via Port Limon.
Jan. 3	Tolosa	United Fruit Co.	New York via Habana.	Jan. 6	Gen. W. C. Gorgas	Panama Railroad Steamship Line.	New York via Haiti.
Jan. 3	Antillan	Leyland Line	Liverpool via wayports.	Jan. 6	Caribbean	Panama Railroad Steamship Line.	Cartagena.
Jan. 4	Atenas	United Fruit Co.	Bocas del Toro.	Jan. 7	Bayano	Elders & Fyffes, Ltd.	Kingscott.
Jan. 4	Panama	Panama Railroad Steamship Line.	New York via Haiti.	Jan. 7	Antillan	Leyland Line	Mobile via wayports.
Jan. 7	Bayano	United States Navy.	Port Limon.				
Jan. 7	Owl ¹²	L. T. Williams & Sons.	Hampton Roads.				
Jan. 7	James Timpon	Royal Mail Steam Packet Co.	Bluefields.				
Jan. 7	Teviot		Hamburg and wayports.				

PORT OF BALBOA.

Date.	Vessel.	Line.	From—
Jan. 5	Seijo Maru	Toyokisen Kaisha	Hongkong.
Jan. 6	Seijo Maru	Toyokisen Kaisha	Valparaiso.

¹² And barges.

*Other than ships passing through the Canal.

28.05

Engineering

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FEB 9 1922

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.



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Volume XV. Balboa Heights, C. Z., January 18, 1922. No. 23.

Schedule for Dispatching Ships Through the Canal.

Reference was made in THE PANAMA CANAL RECORD of November 9 to the system of dispatching ships through the Canal on schedule, and to the results obtained under the system up to that time. Subsequent experience has confirmed the effectiveness of the schedule in achieving accurate, safe, and economical handling with slight delays to shipping.

In order that operators and masters may have every opportunity to understand the situation thoroughly, the ship time schedule as now in effect is published below, together with explanatory notes giving the essential rules governing the dispatching of vessels.

Attention is especially invited to the hours by which vessels must arrive at the entrance of the Canal in order to be put through on the day of arrival. These are:

Cristobal inner harbor (Atlantic), 1.30 p. m.

Balboa inner harbor (Pacific), 1.45 p. m. From the anchorage at Balboa to the inner harbor is about 40 to 45 minutes, so that ships should reach the anchorage by 1 p. m. On slack days, when traffic is light it is possible to dispatch ships from Balboa as late as 3 p. m.

It should be noted that the limiting hour at Cristobal is the same as it was prior to the establishment of the schedule. At Balboa the former hour was 3 p. m.; the present limit of 1.45 p. m. is 1 hour and 15 minutes earlier.

The factor which governs the limiting hours is the need of handling the vessels through Gaillard Cut before the end of daylight hours.

The schedule and essential rules are as follows:

SHIP TIME SCHEDULE, THE PANAMA CANAL.

NORTHBOUND.

	N 1	N 2	N 3	N 4	N 5	N 6
	A. M.	A. M.	A. M.	A. M.	A. M.	A. M.
Balboa anchorage.....Leave..	6.00	7.00	7.30	8.00	9.00	9.30
Balboa inner harbor.....Leave..	6.40	7.40	8.20	8.40	9.40	10.15
Miraflores.....Arrive..	7.25	8.25	9.05	9.25	10.25	11.00
Pedro Miguel.....Arrive..	8.35	9.35	10.15	10.35	11.35	P. M. 12.10
Gatun.....Arrive..	P. M. 1.30	P. M. 2.05	P. M. 2.45	P. M. 3.20	P. M. 4.00	5.15
	N 7	N 8	N 9	N 10	N 11	
	A. M.	A. M.	P. M.		P. M.	
Balboa anchorage.....Leave..	10.15	11.00	1.00	Noon. P. M.	2.00	
Balboa inner harbor.....Leave..	10.55	11.45	1.45	12.45	2.45	
Miraflores.....Arrive..	11.40	12.30	2.30	1.30	3.30	
Pedro Miguel.....Arrive..	P. M. 1.05	1.40	2.40	2.35	4.40	
Gatun.....Arrive..	6.35	7.00	8.15	7.45	9.45	

SOUTHBOUND.

	S 1	S 2	S 3	S 4	S 5
Cristobal.....Leave..	A. M. 6.15	A. M. 7.30	A. M. 8.00	A. M. 8.45	A. M. 9.15
Gatun.....Arrive..	7.15	8.30	9.00	9.45	10.15
	P. M.	P. M.	P. M.	P. M.	P. M.
Pedro Miguel.....Arrive..	12.10	1.10	2.10	2.55	3.20
Miraflores.....Arrive..	1.00	2.00	3.00	3.45	4.10
	S 6	S 7	S 8	S 9	S 10
Cristobal.....Leave..	A. M. 11.00	A. M. 11.50	P. M. 12.55	A. M. 10.30	A. M. 11.45
Gatun.....Arrive..	Noon.	P. M. 12.50	1.55	P. M. 11.30	P. M. 12.45
	P. M.			P. M.	
Pedro Miguel.....Arrive..	5.10	5.55	6.40	4.25	5.50
Miraflores.....Arrive..	6.00	6.45	7.25	5.15	6.40

NOTES.

¹ N 5, N 6, N 7, N 8, N 9, N 10, released from schedule at Gamboa.

² S 5, S 6, S 7, S 8, S 9, S 10, released from schedule at Pedro Miguel.

³ Under certain conditions S 4, S 5, S 6, S 7, S 8, S 9, and S 10 may be released from schedule at Gatun.

⁴ Ship N 1 will be required to tie up about 30 minutes on arrival at Pedro Miguel, because the locomotive crew will not go on duty until 9 a. m.

⁵ Ships N 2, N 6, and N 8 may have to tie up at Pedro Miguel not to exceed 15 minutes, if traffic is heavy.

⁶ Ships S 7 and S 8 may have to tie up a short time after passing Pedro Miguel, or on arrival at Miraflores, if traffic is heavy.

⁷ When traffic permits, and on Sundays, N 3, N 6, S 3 and S 5 will not be dispatched.

⁸ N 1 will be dispatched only when a ship is available in the basin or at the docks in Balboa.

⁹ On Sundays and holidays N 3 and N 6 may be dispatched only in case such dispatching will not require the use of more than 10 locomotives simultaneously at Pedro Miguel and Miraflores.

On Sundays and holidays S 3 and S 5 may be dispatched only in case they are 4-car ships.

¹⁰ The following will govern with respect to releasing ships S 6, S 7, S 8, and S 10, at Gatun:

(a) If S 9 is released at Gatun or is not dispatched for the day, S 6 will be released at Gatun with orders to run on S 9 schedule.

(b) If S 6 is released at Gatun or is not dispatched for the day, S 10 will be released at Gatun with orders to run on S 6 schedule, and so on.

(c) The general principle will be followed that if any one of these four ships is omitted for the day, or is released at Gatun, each of the ships which follows on the schedule will be released at Gatun and given a vacant schedule number as far advanced as possible, so as to insure that they arrive at Pedro Miguel in succession at proper intervals and on one of the schedule times shown on the schedule. This is done to avoid having the ships "bunched" at Pedro Miguel, because only one of these ships can be handled there at a time and those arriving ahead of a schedule time must tie up.

"Ship N 11 will *not* be dispatched "tandem" or "double." It will not be dispatched at all if either S 3 or S 5 has been dispatched, nor if both S 6 and S 9 have been dispatched.

If at any time of the day it appears that there will be, within the time limit of the day, more vessels ready to transit the Canal than there are remaining vacant places on the schedule, the remaining ships may be sent "double" or "tandem," on as many of the schedule numbers as necessary to accommodate the excess. The ships will then be handled at the locks in the most practicable manner in order of arrival. The object of this rule is to avoid holding over night ships which are ready to begin transit within the time limit.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended January 13:

Motor ship *James Timpson*, repair dynamo engine; test tail shaft for alignment; barges *Nos. 140*, dock and undock; stage, clean, and scale bottom; paint bottom 2 coats of anticorrosive and 1 coat of antifouling; test tanks; calk all leaky rivets and all seams; *No. 226*, dock and undock; stage, clean, and scale bottom; paint bottom 2 coats of anticorrosive and 1 coat of antifouling; test tanks; calk all leaky rivets and all seams.

PREVIOUSLY REPORTED.

Tug *Mariner*, dock and undock; stage and clean; scale and paint bottom; convert from coal burner to oil burner, as per specifications; scows *No. 131*, dock and undock; scale and paint bottom; heavy repairs; *No. 139*, dock and undock; scale and paint bottom; heavy repairs; launch *No. 405*, installation of new engine bed and light repairs.

The following vessels were at the Cristobal shops for repairs during the week ended January 16:

Steamships *Gen. H. F. Hodges*, calk deck; fit floor plates and renew angles in fire-room; manufacture new piston rings for ballast pump; clean and cement wash 2 fresh water tanks; repair windlass exhaust line, etc.; *Essequibo*, repair 1 piece of copper pipe; renew and install 5 pieces of hydraulic pipe, etc.; *Lake Elmont*, dry-dock for inspection; *Cristobal*, weld cylinder of blower engine; clean boilers; paint shell of ship; make forgings for neck valves, etc.; *Colon*, repair ice water line, steam heater pipe, and leak in forepeak tank; renew 2 nipples and re-cover part of ice water line on main deck, etc.; *Cartago*, repair steering gear; *Urubamba*, *Caribbean*, *West Katan*, *Crijnsen*, and *Bologna*, minor repairs.

PREVIOUSLY REPORTED.

Steamships *Teviot*, bore H. P. cylinder and test piston and rod; make new bull ring and snap rings; replace rivets in afterpeak tank; *Salvador*, general overhaul, dry-docking, and painting of hull; U. S. S. *O-15*, renew foundation plate for motor room hatch and install hatch; U. S. S. *Sciota*, overhaul anchor windlass; calk deck at windlass; make 2 ball races.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending January 7, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons. (¹)	Tons. (²)
Atenas.....	United Fruit Co.....	January 1.....	January 1.....		4
Ecuador.....	Pacific Mail Steamship Co.....	January 1.....	January 2.....	35	254
Van Rensselaer.....	Royal Netherlands W. I. Mail.....	January 1.....	January 2.....	14	(³)
Andalusia.....	N. O. & S. A. Steamship Line.....	January 1.....	January 2.....	72	(³)
Gen. O. H. Ernst.....	Panama Railroad Steamship Line.....	January 1.....	January 4.....	167	415
San Juan.....	Pacific Mail Steamship Co.....		January 4.....		1,897
Manavi.....	Pacific Steam Navigation Co.....		January 4.....		244
Gen. W. C. Gorgas.....	Panama Railroad Steamship Line.....	January 1.....	January 6.....	1,330	610
Zacapa.....	United Fruit Co.....	January 2.....	January 4.....	1,850	(⁴)
Caribbean.....	Panama Railroad Steamship Line.....	January 2.....	January 6.....	625	48
Tolosa.....	United Fruit Co.....	January 3.....	January 4.....	157	35
San Gil.....	United Fruit Co.....	January 3.....	January 5.....	32	(³)
Antillian.....	Leyland Steamship Line.....	January 3.....	January 7.....	502	328
Leira C. Hall.....	Pacific Metals Corporation.....	January 3.....	January 6.....	14	5
Jamaica.....	Pacific Steam Navigation Co.....	January 4.....	January 6.....	33	174
Atenas.....	United Fruit Co.....	January 4.....	January 4.....	2	86
Quilpe.....	Pacific Steam Navigation Co.....	January 5.....	January 6.....	682	377
Panama.....	Panama Railroad Steamship Line.....	January 7.....		1,205	
Bayano.....	Elder & Fryes, Ltd.....	January 7.....	January 7.....	4	1
Palena.....	Chilean Steamship Line.....	January 7.....		691	
Teviot.....	Pacific Steam Navigation Co.....	January 7.....		100	

¹ No cargo discharged.² Pounds.³ No cargo laded.⁴ Packages.

Postal Addresses of The Panama Canal.

The postal address is, The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, January 14, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Haniburg Maru	7	19 45	8	6 35	8	14 22	8	17 10	Japanese	Ozaka Shosen Kaisha	400.0	54.5	24.0	New Orleans	Yokohama	Cotton, general.	4,856	5,765	4,043
Mineha	7	4 28	8	19 33	8	19 00	8	20 30	American	W. R. Grace & Co.	298.0	40.0	17.0	New York	Salverry	General	1,343	2,835	1,822
Nagata	9	12 15	9	6 33	9	13 58	9	15 00	American	United States Navy	243.0	36.3	17.6	Habana	Balboa		6,300	5,789	4,082
Tai souk	9	6 47	9	7 50	9	16 04	9	17 25	British	Edward Hain & Son	400.9	52.0	20.0	Texas City	Melbourne	Sulphur			
North American	9	8 38	9	0 10	9	16 52	9	23 30	British	American Metal Transp. Co.	251.0	43.0	20.0	Baltimore	Guayaquil	General	2,650	2,444	1,571
Singapore Maru	9	14 43	9	12 05	9	20 01	9	21 46	Japanese	Kokusai Kisen Kaisha	385.0	51.0	27.0	Salvado	Yokohama	General	7,100	5,914	4,389
Kia (Ta)	9	15 37	9	12 33	9	19 29	9	20 16	British	Shaw, Saville & Albion Co.	448.3	56.0	26.6	London	Dunedin	General	5,650	8,237	5,771
Narita	8	23 07	10	7 38	10	15 31	10	17 35	Norwegian	Thor. Thoresen	254.8	39.0	11.6	New York	Guayaquil	General	64	2,064	1,479
Dana	10	11 00	10	12 30	10	17 55	10	19 00	Danish	Danish Government	130.0	23.0	15.0	St. Thomas	Balboa	Ballast	554	363	180
Quilbota	8	7 20	10	12 30	10	19 03	10	21 30	British	Pacific Steam Navigation Co.	361.4	46.2	20.0	New York	Guayaquil	General	554	4,768	2,956
Sonne	10	11 25	11	6 16	11	13 28	11	14 37	American	United States Army	448.0	58.0	27.0	New York	San Francisco	Army stores	2,810		
Steel Scientist	11	6 38	11	7 30	11	18 19	11	19 20	American	United States Steel Products Co.	424.0	56.0	25.0	Galveston	Kobe	General	7,700	7,634	2,558
Pleades	11	10 39	11	11 00	11	19 27	11	20 48	American	Luckenbach Line	331.5	47.0	22.0	Mobile	San Francisco	General	3,308	4,147	3,259
Panama	7	15 12	11	7 50	11	10 37			American	United States Navy	360.8	45.0	17.0	Cristobal	Gatun Lake	Logs	200	2,084	1,633
James Timpson	7	5 22	12	8 10	12	16 21			American	The Resolved Corporation	350.0	41.2	23.8	Bluefields	Balboa	General	377	3,666	2,577
Palena	7	18 45	12	11 03	12	17 42	12	19 41	Chilean	Chilean Steamship Line	350.0	68.0	30.3	Cristobal	Valparaiso	Crude oil	15,000	11,043	8,130
Vaspedite	12	3 00	12	12 40	12	21 12	12	22 35	British	Imperial Oil Co.	500.3	68.0	30.3	Mata Redondo	Vancouver	General	6,807	9,055	6,822
Ruspehu	13	12 33	13	6 38	13	14 22	14	0 40	British	New Zealand Shipping Co.	457.0	59.0	25.0	London	Wellington	General	4,680	6,532	4,528
Wm. A. McKenney	13	1 10	13	7 22	13	15 27	13	16 25	American	Crowell & Thurlow	395.0	55.0	24.0	Savannah	Los Angeles	General	1,750	533	422
Scotia Maiden	3	17 00	13	7 05	13	17 17	13	18 03	British	Scotia Maiden Co.	149.0	33.0	12.8	Marseilles	Papeete	Coal	7,155	8,341	6,010
Harpura	13	6 50	13	9 00	13	17 33	13	23 58	British	British-Indian Steam Nav. Co.	445.0	58.0	27.0	Barry	Lytleton	Sugar	7,244	5,907	4,398
Hobuku Maru	13	2 26	13	11 00	13	19 45	13	20 23	Japanese	Kawasaki Dockyard Co.	385.0	61.0	28.6	Habana	Yokohama	Petroleum	11,200	9,744	6,973
Dixie Arrow	13	13 40	14	6 35	14	14 26	14	15 50	American	Standard Transportation Co.	468.3	62.0	28.6	New York	Hongkong	Sugar	7,203	5,910	4,400
Chifuku Maru	13	9 15	14	6 10	14	15 25	14	16 30	Japanese	Kokusai Kisen Kaisha	385.0	51.0	26.0	Manat	Formosa	Sugar	1,655	9,158	6,970
Arizona	13	11 52	14	8 10	14	16 14	14	17 20	American	American-Hawaiian Line	470.0	57.0	19.0	New York	Seattle	General	5,000	5,228	3,809
Manchester	13	19 35	14	8 25	14	17 18	14	18 25	British	Manchester Lines, Ltd.	385.0	52.0	22.7	Manchester	Vancouver	Coal	380	15,234	10,405
Spinner	13	23 50	14	9 05	14	18 20	15	15 22	American	Mason Navigation Co. (S. B.)	517.0	72.2	22.0	Baltimore	Hilo, T. H.	General	2,100	9,262	6,883
Buckeye State	13	23 50	14	9 05	14	18 20	15	15 22	American	Mason Navigation Co. (S. B.)	517.0	72.2	22.0	Baltimore	Hilo, T. H.	General	2,100	9,262	6,883
Harry Luck	14	6 40	14	9 40	14	19 24	14	20 30	American	Luckenbach Line	449.0	60.0	21.3	New York	Los Angeles	General	1,185	9,037	6,059
Essequibo	13	9 34	14	10 20	14	20 45	14	22 00	British	Pacific Steam Navigation Co.	450.0	57.0	23.8	New York	Valparaiso	General	2,447	5,129	3,251
Princess	14	6 32	14	10 45	14	21 40	14	22 52	American	Equitable Trust Co.	429.0	47.0	25.6	New Orleans	Los Angeles	General	8,319	6,929	5,182
Endicott	14	1 30	14	12 05	14	22 40	14	23 45	American	Barber Steamship Line (S. B.)	402.6	54.8	28.0	New York	Yokohama	General	8,500	10,116	7,680
M. S. Dollar	14	6 35	14	12 55	15	12 08	15	1 20	British	Robert Dollar Line	475.0	61.0	27.0	New York	Yokohama	General	300	8,407	5,213
Argonne	14	12 23	14	13 40	15	12 55			American	United States Navy	436.9	58.2	22.2	Charleston	San Diego	Naval stores			

* Transport.

* Gunboat.

* Tug towing barges Nos. 463 and 472.

* Auxiliary schooner.

Walter A. Luckenbach	8	4	00	8	7	56	8	14	52	8	14	52	American	Luckenbach Line	446.5	56.1	22.6	Portland	Boston	General	3,200	8,785	6,532
Acapulco	8	9	00	8	15	11	8	21	30	9	14	45	British	Pacific Steam Navigation Co.	215.0	33.0	14.6	Champerico	Cristobal	Coffee, wood, etc	542	1,273	706
Lehigh	8	14	50	9	6	47	9	15	47	9	15	47	British	South American Steamship Co.	251.0	43.6	20.9	Valparaiso	New York	(*)	2,757	2,444	1,593
Seaside	8	2	30	9	7	46	9	15	47	9	15	47	Danish	A. P. Muller & Co.	302.2	44.2	16.0	Butaritari, G.I.	United King.	Copra	2,218	3,212	2,166
Urubamba	9	4	00	9	9	03	9	16	28	15	8	15	Peruvian	Kokusi Kisen Kaisha	381.2	48.1	20.0	Mollendo	Cristobal	General	2,052	4,803	2,951
Malta Maru	9	18	00	10	7	49	10	15	45	11	19	00	Japanese	United States Government	400.0	53.0	24.0	Portland	Falmouth	Wheat	7,238	5,907	4,304
Asheville	8	18	24	10	8	40	10	16	05	10	16	40	American	United States Steel Products Co.	225.0	41.0	14.0	Darien	Charleston	Ballast	7,496	5,311	
Lompoc	4	16	30	10	9	20	10	16	45	10	16	45	British	C. T. Bowring	435.0	55.9	20.0	Iquique	Tampico	(*)	5,900	5,403	3,967
Cherry Branch	10	5	00	10	10	19	10	18	15	10	22	25	British	Nautilus Steamship Co.	398.0	52.0	24.6	Cocos Island	Cristobal		123	69	
Arabia	9	14	50	10	10	20	10	19	53	10	19	53	Panaman	E. V. Paulsen	103.6	24.0	10.0	Vancouver	London	General	5,805	4,530	
Santa Rosa	11	12	58	11	14	06	11	21	50	12	21	50	American	United States Steel Products Co.	405.0	52.6	23.0	Vancouver	London	General	4,000	11,487	8,732
Andrea P.	11	13	35	11	14	48	11	22	35	11	22	35	American	Luckenbach Line	496.0	68.2	19.6	Portland	New York	General, shingles	1,188	6,573	4,901
Luckenbach	11	19	44	12	6	38	12	14	00	13	9	14	American	Swayze & Hoyt (S. B.)	410.5	54.3	18.0	San Francisco	Buenos Aires	General	7,900	6,689	4,982
West Katon	11	23	00	12	7	42	12	15	22	12	16	53	British	Hall Line, Ltd.	395.0	55.0	27.0	San Francisco	Hull, England	Lumber, general	7,200	7,330	5,241
City of Naples	12	2	30	12	8	36	12	16	25	12	16	25	American	United States Steel Products Co.	446.0	56.1	23.0	Seattle	Boston	General	3,750	8,508	6,179
Mobile City	12	2	30	12	8	36	12	16	25	12	16	25	American	Luckenbach Line	378.5	51.5	23.0	Valparaiso	New York	Lumber, general	4,630	5,521	3,599
Katrina Luckenbach	12	14	30	13	6	43	13	14	40	13	14	40	American	Italian Line	398.0	50.3	23.0	Valparaiso	Genoa	General	6,127	5,849	4,081
Armando VIII.	11	15	00	13	7	50	13	15	16	13	16	18	Italian	French Line	190.0	29.1	13.3	Buenaventura	Bordeaux	Coffee, hides	405		
City of Naples	12	21	00	13	8	43	13	17	30	14	11	25	French	Colombian Maritime Co.	407.7	53.7	23.0	Seattle	Cristobal	General	7,500	7,150	4,913
Saint Jean	13	6	00	13	9	01	13	17	10	13	17	10	American	United American Lines					Liverpool	General			
Bahoa	14	9	45	14	10	59	14	18	06	14	18	17	American										
Minnesota	14	9	45	14	10	59	14	18	06	14	18	17	American										

* Cruiser.

* Motor ship.

* For orders.

* Copper ore, cotton, and cacao.

* Nitrate, ties, ore, and borax.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Jan. 8	Abangarez	United Fruit Co.	New Orleans via Habana.	Jan. 8	Van Rensselaer	Royal Netherlands W. I. Mail	Puerto Colombia.
Jan. 8	Parissina	Royal Mail Steam Packet Co.	Port Limon.	Jan. 11	Teviot	Royal Mail Steam Packet Co.	Puerto Colombia.
Jan. 9	Parissina	United Fruit Co.	New Orleans.	Jan. 12	Turriaba	United Fruit Co.	New York via Kingston.
Jan. 11	Tivives	Spanish Line	Habana.	Jan. 12	Turriaba	United Fruit Co.	New York via Colombia and Kingston.
Jan. 11	Turriaba	United Fruit Co.	New York via Kingston.	Jan. 12	Abangarez	United Fruit Co.	New Orleans via Bocas del Toro.
Jan. 11	Lake Elmont	Clyde Line (S. B.)	High seas.	Jan. 13	P. de Sastretegui	Spanish Line	Puerto Colombia.
Jan. 13	Cristobal	United Fruit Co.	Norfolk.	Jan. 13	Panama	Panama Railroad Steamship Line	New York via Haiti.
Jan. 13	Calamates	United Fruit Co.	New York via Habana.	Jan. 13	Owl	United States Navy	Hampton Roads.
Jan. 13	Caribbean	Panama Railroad Steamship Line.	Cartagena	Jan. 14	San Benito	United Fruit Co.	Boston via Kingston.
Jan. 13	Colon	Panama Railroad Steamship Line.	New York via Haiti.	Jan. 14	Calamates	United Fruit Co.	New York via Port Limon and Habana.
Jan. 14	San Benito	United Fruit Co.	Boston via Port Limon.				

PORT OF BALBOA.

Date.	Vessel.	Line.	From—
Jan. 14	Anzo Maru	Toyo Kisen Kaisha	Valparaiso.
Jan. 14	Anzo Maru	Toyo Kisen Kaisha	None

* Other than ships passing through the Canal.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Two Weeks Ending January 14, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Ecuador.....	Pacific Mail Steamship Co.....	January 2.....	January 2.....	7	14
Andalusia.....	Svenska Lloyd.....	January 2.....	January 2.....	5	
Chateau Thierry.....	U. S. Government.....	January 3.....	January 4.....	359	
Laura C. Hall.....	Pacific Metals Corporation.....	January 3.....	January 3.....	11	
San Juan.....	Pacific Mail Steamship Co.....	January 4.....	January 4.....		26
Seiyo Maru.....	Toyo Kisen Kaisha.....	January 5.....	January 6.....	626	
Laura C. Hall.....	Pacific Metals Corporation.....	January 6.....	January 6.....		87
Jamaica.....	Pacific Steam Navigation Co.....	January 6.....	January 6.....		32
Acajutla.....	Pacific Steam Navigation Co.....	January 8.....	January 8.....	76	
Ansaldo VIII.....	Italian Line.....	January 11.....	January 12.....		121
Anyo Maru.....	Toyo Kisen Kaisha.....	January 14.....	January 15.....	56	25

¹Transport.

Official Circulars.

Acting Governor.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 16, 1922.

To all concerned—Effective January 17, 1922, and during my absence from the Isthmus, Col. M. L. Walker, U. S. A., Engineer of Maintenance, will be Acting Governor.

JAY J. MORROW,
Governor.

Duties of President, Panama Railroad Company.

PANAMA RAILROAD COMPANY,
OFFICE OF THE PRESIDENT,

BALBOA HEIGHTS, C. Z., January 16, 1922.

To all concerned—Effective January 17, 1922, and during my absence from the Isthmus, Col. M. L. Walker, U. S. A., 2d Vice President, will perform such duties of the President as relate to the operations of the company on the Isthmus.

JAY J. MORROW,
President, Panama Railroad Company.

Acting Chief Quartermaster.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 12, 1922.

To all concerned—Effective January 16, 1922, and during the absence on leave of Mr. R. K. Morris, Mr. Roy R. Watson will act as Chief Quartermaster.

JAY J. MORROW,
Governor.

Vehicle Traffic Regulations—One-way Streets.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 5, 1922.

CIRCULAR NO. 717-4:

1. The regulations covering traffic approach and exit to and from Pier 18, Balboa, are amended to read as follows:

"Dock 17 from Dock 16 to Pier 18 entrance, Pier 18 from Pier entrance to Balboa Road."

2. That portion of Cash Alley, Cristobal District, extending from the junction of "D" Street

and Broadway to 14th Street, is hereby made a one-way street for northbound traffic.

3. Section 4 of Circular No. 717-3, dated May 18, 1921, is amended accordingly.

JAY J. MORROW,
Governor.

Invitation for Proposals to Furnish Native Logs to The Panama Canal.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10.30 a. m. Wednesday, February 15, 1922, and then opened, for furnishing The Panama Canal 300,000 feet B. M., more or less, native logs, during a period of one year from date of contract, in accordance with form of agreement, copies of which may be had upon application to the office of the Chief Quartermaster.

Bids must be inclosed in sealed envelope, addressed to The Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., and marked "Proposal for furnishing native logs, to be opened February 15, 1922."

The Panama Canal reserves the right to reject any or all bids.

The successful bidder will be given the first option to purchase, if desired, the launch *Mecap*, and other logging equipment formerly used by The Panama Canal, at reasonable appraised prices. This launch was built for logging purposes and is particularly suitable for same. Launch may be inspected at Monte Lirio.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Typewriters For Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, S. D., Administration Building, Balboa Heights.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Engineering.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL ZONE Isthmian Canal Commission
PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address
The Panama Canal Record, Balboa Heights, Canal Zone, or
The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office
at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., January 25, 1922. No. 24.

Growth of the Lumber Trade.

The most conspicuous feature of the traffic history of the Panama Canal during the calendar year 1921 was the rapid expansion of the trade between Pacific North America, especially the western United States, and the Atlantic coast of North America and Europe. A number of new steamship lines began during the year to compete for this west coast business, and the volume of cargo handled has increased from month to month. Lumber has contributed no small share to the total.

In 1920 lumber shipments through the Canal from Pacific to Atlantic totaled 205,172 tons. In 1921 this total increased to 448,087 tons, a growth of 118 per cent. The United States furnished the bulk of these shipments, 387,993 tons, and western Canada 57,429 tons. There were small shipments of lumber from Central and South America, Australasia, and the Far East.

The countries of destination were: East coast of the United States, 346,249 tons; British Isles, 60,048 tons; other Europe, 11,895 tons; with lesser tonnage to the east coast of Canada, the West Indies, and the east coast of Mexico.

The shipments of lumber to the British Isles and Europe were heaviest during the first 6 months of the calendar year, and declined very noticeably thereafter. Shipments to the east coast of the United States, however, show a steady increase. These coast-to-coast shipments of lumber that was formerly handled by rail were stimulated by the increase of railroad freight rates.

The trade was handicapped at first by the lack of adequate terminals equipped to handle lumber on the Atlantic seaboard, but it is reported that this has been remedied.

Water Route for Pacific Canned Fish.

World Trade, a San Francisco publication, refers in a recent issue to the increasing use of the water route for the shipment of Columbia River salmon. It says:

Salmon movements have been the shipping feature of the year on the Columbia, and have taken some of the most startling turns in all the marine developments of the Pacific coast. In June, 1920, the salmon industry was in a precarious condition. This continued until about March, 1921, when the shipment of salmon by water was commenced in earnest. The large number of regular, rapid, and direct steamship lines which the port of Astoria terminals had attracted provided excellent means for the dispatch of salmon to all parts of the world. Hitherto practically all of the salmon pack of the Columbia River had been shipped overland, but the storage facilities, handling equipment, and transportation lines at the Astoria terminals, coupled with their closeness to the sea, started a movement for the marine shipment of the salmon which acquired such momentum that the industry was saved from the disaster that threatened it. The quantities of canned salmon which had glutted the market have now been swept away. This movement, combined with a light pack in 1921, has removed the surplus, improved the price, and insured the steamship lines that salmon will continue to provide them with valuable cargoes.

MOVEMENTS OF OCEAN VESSELS. Week ending at midnight, January 21, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.	Completed transit.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.							Nature.	Tons.	Gross.	Net.
Panama Maru	14	12 33	15	6 28	15	14 58	15	16 39	Japanese.				General.	3,185	6,099	4,289
Cold Harbor	14	14 23	15	7 12	15	16 50	15	17 52	American.		Buenos Aires.	Kobe	General.	2,000	6,131	4,418
Urumbamba	9	16 28	15	8 15	15	17 50	15	19 09	Peruvian.		Philadelphia.	Los Angeles.	General.	297	4,803	2,951
Gen. H. F. Hodges	12	3 10	15	8 45	15	18 01	15	19 00	American.		Cristobal.	Callao.	General.	392	3,013	1,574
Antiochia	13	18 00	15	8 47	15	19 10	17	9 12	German.		New York	Guayaquil	General.	746½	4,219	3,003
Bailena	13	23 20	15	10 16	15	19 21	15	20 35	British.		Hamburg	Champerico	General.	4,132	5,816	4,113
Bolton Castle	15	6 23	15	12 30	15	20 40	15	22 00	British.		London	Colon	General.	7,927	6,489	4,869
Amur Maru	15	18 32	16	6 28	16	15 36	16	16 50	Japanese.		Philadelphia	Yokohama.	General.	8,311	7,401	5,629
Leitrim	15	18 37	16	7 18	16	15 36	16	16 50	British.		New York	Kobe	General.	5,568	10,050	6,824
Nanerie	15	12 55	16	8 35	16	21 06	16	22 45	Dutch.		Liverpool	Auckland	General.	6,339	6,369	4,937
Haarlem	15	1 10	16	9 20	16	21 45	16	22 50	American.		Newport News	Yokohama	General.	684½	4,759	3,060
Balboa	13	17 10	16	10 25	16	21 50	16	23 50	British.		Amsterdam	Guayaquil	Ballast.	1,021	1,273	706
Acapulco	8	21 30	16	10 10	17	13 51	17	14 55	British.		Cristobal	Champerico	General.	1,021	1,273	706
Magellan	16	9 30	17	6 40	17	13 48	17	14 55	American.		Hamburg	Valparaiso.	General.	1,879	8,786	6,074
Scotia	17	7 55	17	8 10	17	15 13	17	18 22	British.		Cristobal	Balboa	General.	3,423	7,026	5,323
City of Lincoln.	17	17 11	18	6 25	18	14 41	18	15 58	Norwegian.		Hull	San Francisco	Crude oil.	9,152	7,059	5,043
San Joaquin.	18	4 00	18	7 28	18	15 35	18	16 51	British.		Tampico	Antofagasta.	Sugar.	4,200	4,995	3,622
Gorleston	24	18 05	18	11 05	18	16 52	18	20 06	British.		Matanzas.	Vancouver.	General.	557	1,213	692
Salvador.	16	8 30	19	6 15	19	15 43	19	16 55	Italian.		Cristobal	Guayaquil	General.	466	5,531	3,773
Bologna	18	19 10	19	7 23	19	18 05	20	0 10	Norwegian.		Genoa	Valparaiso.	General.	6,050	5,688	3,930
Tosca	18	11 05	19	8 54	19	19 01	20	20 25	French.		Antwerp.	Los Angeles.	General.	800	6,394	4,515
Sonora	19	1 00	19	12 25	19	20 12	19	21 13	British.		New York	San Francisco.	General.	10,519	9,465	7,349
City of Oran.	19	12 00	19	13 18	19	21 13	19	22 20	American.		New York	Yokohama.	General.	3,000	8,552	6,236
K. I. Luckenbach.	19	12 00	19	13 18	19	21 13	19	22 20	American.		New York	San Francisco.	General.	3,000	8,552	6,236
Invader	19	6 33	20	6 55	20	15 17	20	16 18	American.		Cristobal	Gatun lake	Ballast.	1,737	7,112	4,896
Cayuco 1093	20	6 33	20	6 55	20	15 17	20	16 18	American.		Cristobal	Gatun lake.	Ballast.	1,737	7,112	4,896
Ohioan.	19	20 25	20	10 05	20	17 40	22	20 45	British.		Philadelphia	San Francisco.	General.	6	132	72
Laura C. Hall	14	7 10	14	7 10	14	11 12	20	20 45	British.		Cristobal	Buenaventura.	General.	4,684	3,795	2,660
Cootie	18	22 00	21	6 25	21	14 14	21	17 20	American.		Cristobal	Gatun lake.	Ballast.	4,684	3,795	2,660
Delco	20	22 00	21	12 55	21	20 30	21	22 00	British.		Fort Arthur.	Seattle	General.	8,624	7,186	5,335
Comeric	20	22 00	21	12 55	21	20 30	21	22 00	British.		Fort Arthur.	Yokohama.	Case oil, etc.	8,624	7,186	5,335

Tug.

Motor ship.

Launch.

Motor schooner.

¹⁶ Sub-tender.

Rates of Tolls at Panama and Suez Canals.

Tolls for the passage of vessels through the Panama Canal are levied in accordance with the following:

Merchant vessels carrying passengers or cargo, per net vessel ton (each 100 cubic feet) of actual earning capacity.....	\$1.20
Vessels in ballast without passengers or cargo, per net vessel ton (each 100 cubic feet) of actual earning capacity.....	.72
Tolls may not exceed the equivalent of \$1.25 per net registered ton as determined by United States rules of measurement, nor be less than the equivalent of \$0.75 per net registered ton.	
Naval vessels, other than transports, colliers, hospital ships, and supply ships, per displacement ton.....	.50
Army and Navy transports, colliers, hospital ships, and supply ships, the vessel to be measured by the same rules as are employed in determining the net tonnage of merchant vessels, per net ton.....	1.20

To afford a comparison with the rates at the Suez Canal, the American Consul at Port Said obtained the following information from the Suez Canal Administration and forwarded it under date of November 1:

The Suez Canal tolls are actually payable in Egyptian currency: L. E.¹ equals P. T.² 100 or \$4.9431 prewar value; ³ £1 equals P. T. 97½ and, as the English pound is the standard coin currency of Egypt, it does not affect the rates charged which are as follows:

Frs. 8 per ton for ships carrying cargo.

Frs. 5.50 per ton for ships in ballast.

Reduced

Fr. 1 equals to P. T.² 3.85757.

Frs. 5.50 equals to 21.21664.

Frs. 8 equals to 30.86056.

In taking P. T.² 25 as an average rate for the U. S. dollar the cost would be:

For ships in ballast, \$0.8487.

For ships carrying cargo, \$1.2344.

¹ Egyptian pound. ² Piasters. ³ Pound sterling.

Supplement No. 9 to Tariff No. 5.—Trip Through Gaillard Cut.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., January 16, 1922.

ITEM 6.—LAUNCHES.

6. For steam yacht *Gold Star*—rate for individual tickets for trip through Gaillard Cut (minimum number of tickets required to be sold not less than 40. No refund to be made for unused tickets)..... \$2.00

JAY J. MORROW,

Governor, The Panama Canal.

President, Panama Railroad Company.

Tourist Parties.

The first large tourist parties to visit the Isthmus during the current dry season arrived last week, one party on the *Calamares* of the United Fruit Company and the other, conducted by the American Express Company, on the Matson Line steamer *Buckeye State*. Smaller tours had arrived in December and early in January.

Twenty-two more tours have been definitely scheduled for the time up to the middle of April. They range from parties of a dozen up to 300 or 400 on a vessel. The tours are being managed by the United Fruit Company, the American Express Company, the Raymond Whitcomb Company, the Canadian Pacific Railway, and the White Star Line. Smaller parties are being sent by other travel companies.

The Matson Line and the Pacific Mail Steamship Company, operating passenger ships through the Canal in the United States coastwise trade, are featuring the interest of the route to travelers.

The "Advance" to Enter Colombian Service.

The steamship *Advance* of the Panama Railroad Steamship Line will take the place of the *Caribbean* in the company's East Colombian service, calling at Puerto Colombia and Cartagena, beginning with the voyage from Cristobal on February 4. The *Advance* was retired from the New York service the early part of December, 1921, and laid up in Gatun Lake, pending the completion of shipment of cattle on the *Caribbean*, which is especially fitted for that service. Cattle shipments were completed with the last voyage of the *Caribbean*, and the *Advance* has been taken to Cristobal shops for conditioning in preparation for her new service. No cattle are to be carried on her for the present.

An inquiry was recently received from Ecuador as to the possibility of making a shipment of 500 head of cattle from that country to the Isthmus on the *Caribbean*, but no more cattle are to be purchased by the Supply Department from outside sources at this time.

Added Facilities for Sightseeing at the Panama Canal.

As an adjunct to sightseeing at the Canal, the steam launch *Gold Star* is carrying passengers between Gatun and Pedro Miguel, passing through Gatun Lake and Gaillard Cut, at a rate of \$4 per passenger, provided not less than 20 tickets are sold for the trip. As many as 100 passengers can be taken at one time. The launch makes about 15 knots in open water, and the trip one way takes approximately 2½ hours. Passage from Cristobal and Colon to Gatun, and between Pedro Miguel and Balboa or Panama, is made either by the Panama Railroad or in public automobiles over concrete and asphalt roads.

For larger parties special trains may be hired on the Panama Railroad, for transit direct or in connection with launch trips.

The Panama Canal has issued a mimeographed summary, "Office Information for Tourist Companies and Passenger Agents," giving details of the accommodations for visitors to the Isthmus. Copies will be furnished on request.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending January 21, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged.	Laded.
				Tons.	Tons.
Antiochia.....	Hamburg-American Line.....	January 15.....	January 17.....	451	1
Acajutla.....	Pacific Steam Navigation Co.....	January 16.....	January 16.....		4
Newport.....	Pacific Mail Steamship Co.....	January 17.....	January 17.....	3	
Pacifico.....	Arthur Matheson.....	January 18.....	January 18.....	12	
Jeptha.....	United States Shipping Board.....	January 18.....	January 18.....		50
Salvador.....	Pacific Steam Navigation Co.....	January 18.....	January 18.....		36
Bologna.....	La Veloce Line.....	January 19.....	January 19.....	69	
Laura C. Hall.....	Pacific Metals Corporation.....	January 19.....	January 19.....	14	
Delft.....	Royal Netherlands W. I. Mail.....	January 19.....	January 19.....	134	
America.....	Santiago Sajel.....	January 19.....	January 19.....	36	
Venezuela.....	Pacific Mail Steamship Co.....	January 20.....	January 21.....	16	134
Laura C. Hall.....	Pacific Metals Corporation.....	January 20.....	January 20.....		79
Manavi.....	Pacific Steam Navigation Co.....	January 20.....	January 20.....	12	

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending January 21, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Van Rensselaer	Royal Netherlands W. I. Mail	January 8.	January 8.	24	558
Mineola	W. R. Grace & Co.	January 8.	January 8.	278	(¹)
Quillota	Pacific Steam Navigation Co.	January 8.	January 10.	241	175
Acajutla	Pacific Steam Navigation Co.	January 8.	January 8.	542	
Sarpfos	Caribbean Steamship Co.	January 8.	January 10.	182	5
Abangarez	United Fruit Co.	January 8.	January 12.	(¹)	491
Parismina	United Fruit Co.	January 9.		753	
Urubamba	Peruvian Line.	January 9.		2,040	
Tivives	United Fruit Co.	January 11.	January 12.	66	142
Turrialba	United Fruit Co.	January 11.	January 12.	5	4
Teviot	Pacific Steam Navigation Co.		January 12.		491
Palena	Chilean Line.		January 12.		387
P. de Satrustegui	Spanish Steamship Line	January 11.	January 13.	670	4,004
Gen. H. F. Hodges	Panama Railroad Steamship Line.	January 12.		791	
Essequibo	Pacific Steam Navigation Co.	January 13.	January 14.	171	(¹)
Antiochia	Hamburg-American Line.	January 13.		241	
Balboa	Colombian Maritime Co.	January 13.		405	
Calamares	United Fruit Co.	January 13.	January 14.	118	82
Cristobal	Panama Railroad Steamship Line.	January 13.		9,625½	
Colon	Panama Railroad Steamship Line.	January 13.		1,516	
Caribbean	Panama Railroad Steamship Line.	January 13.		335	
Ballena	Pacific Steam Navigation Co.	January 13.		6	
San Benito	United Fruit Co.	January 14.	January 14.	50	82
Ballena	Pacific Steam Navigation Co.		January 15.		16
Caribbean	Panama Railroad Steamship Line.		January 15.		61
Gen. H. F. Hodges	Panama Railroad Steamship Line.		January 15.		397
Parismina	United Fruit Co.		January 15.		237
Urubamba	Peruvian Line.		January 16.		298
Acajutla	Pacific Steam Navigation Co.		January 16.		1,034
Haarlem	Royal Netherlands W. I. Mail	January 15.	January 16.	177	(¹)
Magellan	Pacific Steam Navigation Co.	January 16.	January 17.	2	106
Crijnsen	Royal Netherlands W. I. Mail	January 16.	January 17.	123	(¹)
Salvador	Pacific Steam Navigation Co.		January 18.		575
Cartago	United Fruit Co.	January 16.	January 19.	2,104	213
Eiger	Caribbean Steamship Line.	January 17.	January 18.	54	(¹)
Jamaica	Pacific Steam Navigation Co.	January 17.	January 21.	51	(¹)
San Blas	United Fruit Co.	January 17.	January 18.	17	77
Nubian	Leyland Line.	January 17.	January 18.	695	497
Sonora	French Line.	January 18.	January 19.	20	(¹)
Newport	Pacific Mail Steamship Co.	January 18.		656	
Laura C. Hall	Pacific Metals Corporation.	January 19.	January 20.	136	9
Manavi	Pacific Steam Navigation Co.	January 20.		391	
Puerto Rico	French Line.	January 20.		75	
Colon	Panama Railroad Steamship Line.		January 20.		1,500
Aysen	Chilean Line.	January 20.		317	
Allianca	Panama Railroad Steamship Line.	January 20.		1,552	
Pastores	United Fruit Co.	January 20.	January 21.	164	287
Agwisun	Ward Line.	January 20.		10,000	
Venezuela	Pacific Mail Steamship Co.	January 21.		439	
Crijnsen	Royal Netherlands W. I. Mail	January 21.		17	
Coronado	Elder & Fyffes, Ltd.	January 21.	January 21.	14	125
Barima	Pacific Steam Navigation Co.	January 21.		315	

¹ No cargo discharged.² No cargo laded.³ Pounds.

Bunker Coal at San Diego and Los Angeles.

Bunker coal is offered at San Diego and Los Angeles at \$13.70 per gross ton of 2,240 pounds, f. o. b. vessel alongside dock; trimming extra at actual cost of labor and accident insurance, plus 10 per cent. These prices are quoted by the Spreckels Brothers Commercial Company, effective January 10, 1922, subject to change without notice.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended January 21:

Motorship *James Timpson*, dock and undock; stage, clean and paint bottom; repair dynamo engine; test tail shaft for alignment; remove water end of circulating pump and install new end; install flanged union in discharge pipe; renew 1 section of 3-inch exhaust line back of boiler; relocate bottom blow line; manufacture

opping lift band; remetal all crank-shaft bearings and caps on port and starboard main engines; renew 8 wrist-pin bushings; true up wrist pins; remetal and machine crank-pin brasses; refasten boilers; renew portion of bottom casing on boiler fronts, urbine tubes; roll tube sheet caps; test boiler; repair damaged keel; steamship *Delft*, remove strainer, main injection; install hard patch on shell; repair sea valve and irculating pump; tug *Favorite*, discharge a portion of bunker coal; remove and eplace lifeboat; barge *No. 134*, straighten coaming; redrive or renew bad order rivets above water line.

Deceased and Insane Employees.

The estates of the following deceased or insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having seal, and submitted in duplicate. These names will be published but once:

DECEASED.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Larcus Bishop.....	44803	Barbados.....	Colon.....	Panama Railroad Co...	January 14, 1922.
Edward Major.....	26851	Bahamas.....	Colon.....	Panama Railroad Co...	January 4, 1922.
Charles Reid.....	22936	Jamaica.....	Cristobal.....	Panama Railroad Co...	January 13, 1922.
Amiel Wright.....	48213	Jamaica.....	Cristobal.....	Panama Railroad Co...	January 10, 1922.
Ernstus (Tarsus) Walters.....	59663	Jamaica.....	Colon.....	Panama Railroad Co...	January 8, 1922.
Ernest A. Lord.....		Grenada.....	Panama.....	Health Department...	January 13, 1922.
Alfred C. Greenewald.....	1383	United States.....	Gatun.....	The Panama Canal.....	November 19, 1921.
Isabel Olivia Clayton.....	60354	Jamaica.....	Panama.....	The Panama Canal.....	December 26, 1921.
James Wilson, alias Moore.....	37018	Barbados.....	Panama.....	The Panama Canal.....	December 16, 1921.
Robert Watson.....	21592	Trinidad.....	Colon.....	The Panama Canal.....	November 19, 1921.

INSANE.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of commitment.
Patrick F. Walsh.....	4146	United States...	Cristobal.....	Panama Railroad Co...	December 24, 1921.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective January 1, 1922:

Commodities.	Unit.	Price.
Gas, bar, average.....	Lb.	\$0.29
Gas, sheet, average.....	Lb.	.40
Gasoline, Tobin, average.....	Lb.	.31
Gasoline, motor grade.....	Gal.	.40
Gas, yellow.....	Lb.	.34
Gun, Navy, spun.....	Lb.	.175
Gun, Navy, unspun.....	Lb.	.175
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Fbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.25
Oil, engine, gas, light, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.675
Oil, engine, gas, heavy, in barrels.....	Gal.	.65
Oil, engine, gas, extra heavy, in cases.....	Gal.	1.125
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.55
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.16
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Paint, gear, chain and wire rope, lubricating.....	Lb.	.09
Paint, yellow, cup, No. 3.....	Lb.	.11
Paint, yellow, cup, No. 5.....	Lb.	.10
Paint, ash.....	Lb.	.04
Paint, cotton, colored.....	Lb.	.175
Paint, cotton, white.....	Lb.	.20

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Engineering

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THE PANAMA CANAL RECORD

FEB 22 1922

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Volume XV. Balboa Heights, C. Z., February 1, 1922. No. 25.

CANAL WORK IN DECEMBER.

The following is the report of the Acting Governor to the Secretary of War, of Canal work in the month of December, 1921:

BALBOA HEIGHTS, C. Z., January 26, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of December, 1921.

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal, as compared with the preceding month and with the corresponding month of last year, was as follows:

	December, 1921.	November, 1921.	December, 1920.
Commercial vessels.....	239	222	265
Noncommercial vessels.....	35	13	21
Launches, etc. (under 10 tons measurement).....	4	4	9
Total vessels and craft through Canal.....	278	239	295

In addition to the foregoing, Panama Canal equipment consisting of crane boats, dredges, pile drivers, barges, etc., was passed through locks as follows: Gatun, 26; Pedro Miguel, 59; Miraflores, 60.

COMMERCIAL TRAFFIC.¹

Tolls.

Under the present dual method of assessing tolls, the revenue from this source was \$1,003,598.27. Had the net tonnage as determined by the Panama Canal rules of measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$183,043.25. This additional tolls would have been contributed by nationality of ships as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$39,298.90	\$25,089.25	\$64,388.15
Chilean.....	1,554.65	2,512.55	4,067.20
Danish.....	3,167.15	3,104.85	6,272.00
Dutch.....	5,718.10	3,739.40	9,457.50
French.....	1,298.75	519.52	1,818.27
German.....	944.80	1,063.00	2,007.80
Japanese.....	6,166.45	2,675.15	8,841.60
Norwegian.....	3,030.95	1,297.20	4,328.15
Panaman (gain).....	2.07	21.85	19.78
Peruvian.....	3,015.25	3,015.25	6,030.50
Spanish.....		460.10	460.10
Swedish.....	4,274.75	108.65	4,383.40
United States.....	32,715.15	38,253.65	70,968.80
Totals.....	101,182.83	81,860.42	183,043.25

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial."

The additional tolls paid by United States vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$14,270.20	\$21,434.85	\$35,705.05
United States and Canal Zone ports.....	561.46	566.30	1,127.76
United States and United States possessions.....	5,131.75	4,488.00	9,619.75
United States and foreign ports.....	12,432.03	11,764.50	24,196.53
Between foreign ports.....	319.71		319.71
Totals.....	32,715.15	38,253.65	70,968.80

Of the above additional revenue that would have been collected by using the Panama Canal rules exclusively, \$4,182 represents the additional tolls that would have been collected on account of deck cargo.

COMPARATIVE TRAFFIC STATISTICS.

The following tabulations permit a ready comparison of commercial traffic through the Canal in December, 1921, with that of the preceding months, along the lines indicated at the head of the various tables:

TONNAGE, TOLLS, AND CARGO CARRIED.

	December, 1921.	November, 1921.	December, 1920.	Average month for past year.
United States equivalent net tonnage.....	827,340	753,697	832,407	775,307
Panama Canal net tonnage.....	1,017,244	942,411	1,027,918	952,984
Registered gross tonnage.....	1,284,499	1,184,157	1,298,864	1,204,319
Registered net tonnage.....	820,431	752,886	823,758	768,737
Tolls.....	\$1,003,598.27	\$923,048.70	\$1,007,849.32	\$938,424.90
Tons of cargo carried.....	953,053	855,440	1,076,539	892,250

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.10	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,724.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,790.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,593	14	61,980	62,318.75	79,129
November.....	12	74,635	71,525.74	44,976	5	29,940	29,127.50	28,865
December.....	9	47,004	46,318.75	44,101	6	32,957	32,803.75	28,784

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED PER VESSEL.

	December, 1921.	November, 1921.	December, 1920.
United States equivalent net tonnage	3,461	3,395	3,141
Panama Canal net tonnage	4,256	4,245	3,879
Registered gross tonnage	5,378	5,334	4,901
Registered net tonnage	3,432	3,391	3,103
Tolls	\$4,199.15	\$4,157.88	\$3,803.20
Tons of cargo (all vessels)	3,987	3,853	4,062
Tons of cargo (laden vessels only)	4,412	4,322	4,523

COMMODITY STATISTICS.

A classification of cargo passing through the Canal during the month of December, 1921, has been compiled from declarations of cargo submitted by the ships' masters, and while incomplete, is indicative of the kind and quantity of the various commodities carried by ships transiting the Canal. From the cargo declarations and manifests submitted, it was possible to classify by commodities 75 per cent of all cargo passing from the Atlantic to the Pacific, and 88 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith:

Commodity.	December, 1921.	November, 1921.	October, 1921.	September, 1921.
Atlantic to Pacific.				
Oil		30,144	68,891	17,981
Crude	48,272	47,944	25,840	19,781
Refined	46,970	3,113	1,121	2,088
Other	1,918			
Manufactured goods:				
Iron and steel	81,168	65,071	48,074	50,488
Machinery, railroad material, textiles, etc.	24,120	23,927	14,659	19,331
Coal and coke	46,462	52,850	21,512	16,049
Cotton, raw	37,614	20,807	14,725	19,207
Metals	22,007	10,052	8,880	8,467
Ammonia	11,592	7,447	12,072	4,749
Cement	10,809	5,233	2,681	1,834
Paper	5,077	2,900	2,813	1,210
Sulphur	4,000	2,500		11,551
Tobacco	3,086	2,075	2,879	2,452
Other and general	174,015	112,618	150,290	125,541
Total cargo	517,110	386,681	374,437	300,720
Pacific to Atlantic.				
Nitrate	59,957	39,523	54,256	22,758
Manufactured goods: Iron and steel, etc.	2,550	265	1,053	556
Wheat	35,127	110,831	128,375	75,486
Lumber	42,610	50,564	56,606	26,750
Barley	21,781	37,989	67,092	107,831
Oils:				
Crude	4,723	26,617	670	4,820
Refined	16,165	10,169	9,713	18,278
Other	14,469	761	1,581	1,545
Canned goods:				
Fish	5,202	13,767	32,761	17,232
Fruit	15,982	19,808	25,547	35,427
Vegetables, milk, etc.	1,660	1,470	2,523	4,302
Ores	9,805	13,218	3,824	6,433
Metals	10,959	14,515	11,078	10,516
Fruit, fresh and dried	3,876	13,060	4,162	6,664
Sugar	29,879	11,210	20,261	6,657
Beans, peas, lentils	5,351	9,270	20,547	6,774
Flour	8,881	8,799	19,000	15,101
Phosphates	8,900	7,300	14,057	
Cold storage (meats, butter, etc.)	13,809	4,920	18,739	10,600
Cotton	6,660	4,886	12,592	5,392
Rice	6,401	4,678	4,054	7,205
Wool	5,555	4,349	9,081	5,522
Coffee	4,529	3,785	4,594	6,013
Ivory nuts	2,482	3,012	2,811	3,164
Cacao	4,745	2,862	3,844	4,327
Tea	1,394	1,983	3,950	546
Other and general	92,491	49,148	78,567	44,275
Total cargo	435,943	468,759	611,338	454,174

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate for such tolls per cargo ton varies in different ships as the ratio of cargo tonnage varies to the net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of December, 1921, by nationality of vessels:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.13	\$0.99	\$1.07
Chilean.....	2.39	1.65	1.81
Danish.....	.83	.65	.74
Dutch.....	1.11	.62	.70
French.....	2.78	1.13	1.64
German.....	1.60	.95	1.25
Japanese.....	.93	.73	.88
Norwegian.....	.85	1.06	.89
Panamanian.....		.44	.44
Peruvian.....	4.49	.81	1.38
Spanish.....		.63	.63
Swedish.....	.85	.65	.83
United States.....	1.18	1.08	1.11
Average rate all ships, December, 1921.....	1.10	.99	1.05
Average rate all ships, November, 1921.....	1.19	.81	.98
Average rate all ships, October, 1921.....	1.09	.78	.90

ORIGIN AND DESTINATION OF TONNAGE.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past 12 months, the figures representing the Panama Canal net tonnage:

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscellaneous.	Total.
December, 1920.....	332,418	128,739	53,070	36,097	4,608	554,932
January, 1921.....	284,111	129,939	60,564	21,373	21,732	517,719
February.....	268,727	75,532	55,859	18,844	16,271	435,233
March.....	291,937	188,548	85,275	20,731	27,100	613,591
April.....	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,823	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,669
Average month.....	273,422	147,604	38,471	22,362	22,022	503,883

DESTINATION OF ALL TONNAGE FROM ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
December, 1920.....	91,963	248,176	99,594	84,168	31,031	554,932
January, 1921.....	163,295	170,861	56,082	94,583	32,898	517,719
February.....	119,271	168,904	66,958	62,507	17,593	435,233
March.....	139,889	146,075	118,053	153,910	55,684	613,591
April.....	141,584	135,622	131,637	64,155	19,508	492,506
May.....	125,091	103,143	82,499	82,582	21,114	414,429
June.....	143,217	106,369	83,063	46,298	36,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,486	70,551	50,719	487,219
September.....	268,758	90,105	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,615	115,980	136,940	84,391	49,743	575,669
Average month.....	172,092	124,905	93,005	77,082	36,798	503,883

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ORIGIN OF ALL TONNAGE FROM PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
December, 1920.....	145,192	239,389	11,146	58,175	19,084	472,986
January, 1921.....	151,034	230,437	26,843	115,206	53,084	576,604
February.....	173,815	226,242	22,473	34,616	24,459	481,605
March.....	163,294	203,002	28,525	62,652	41,754	499,227
April.....	139,495	168,535	29,756	85,560	38,601	462,997
May.....	174,128	137,258	12,407	81,086	45,309	450,188
June.....	116,521	112,474	18,740	75,400	23,040	346,175
July.....	174,412	99,745	41,084	70,124	22,197	407,562
August.....	229,629	110,248	20,628	68,661	48,894	478,057
September.....	218,453	84,212	14,762	30,814	46,262	394,503
October.....	252,645	124,560	37,720	41,436	42,018	498,379
November.....	189,942	126,381	23,556	6,581	56,934	403,394
December.....	195,969	135,952	28,194	39,616	41,844	441,575
Average month.....	178,809	153,730	24,295	59,302	38,652	454,865

DESTINATION OF ALL TONNAGE FROM PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
December, 1920.....	198,618	157,070	69,008	34,099	14,191	472,986
January, 1921.....	293,836	188,133	49,947	23,295	21,393	576,604
February.....	175,324	163,690	74,363	18,056	50,174	481,605
March.....	190,683	189,793	83,700	21,228	13,823	499,227
April.....	189,209	197,311	53,334	22,043	1,100	462,997
May.....	201,548	140,940	73,705	21,549	12,446	450,188
June.....	155,147	136,292	18,324	26,112	10,300	346,175
July.....	205,690	134,047	23,123	28,770	15,932	407,562
August.....	231,830	194,279	27,256	22,022	2,670	478,057
September.....	204,820	140,555	26,478	17,114	5,536	394,503
October.....	259,613	170,189	18,222	30,955	19,400	498,379
November.....	196,974	164,345	20,446	16,760	4,869	403,394
December.....	191,277	192,575	25,550	21,739	10,434	441,575
Average month.....	207,274	166,863	43,343	23,365	14,021	454,865

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of December of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year:

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe.....		7.7	34.2	
East coast of United States.....	15.4		14.2	
East coast of Mexico.....		41.3		45.0
Cristobal, C. Z.....		7.0		30.7
West coast of United States.....	9.6		9.6	
West coast of South America.....		7.1	11.5	
Australasia.....	9.1			33.3
Far East.....	47.2		16.2	

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for the month of December, 1921, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of January 11, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes for the month of December, 1921, for the preceding month and for the corresponding month of last year:

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	December, 1921.	November, 1921.	December, 1920.	December, 1921.	November, 1921.	December, 1920.
	Number of vessels.			Number of vessels.		
United States coastwise	20	24	12	23	17	10
United States and Far East	27	17	17	5	4	2
Europe and United States	15	13	8	12	21	15
United States and South America	10	12	40	10	11	26
Europe and South America	12	11	10	19	13	16
Cristobal and South America	9	10	17	9	10	17
Europe and Australasia	8	8	6	5	1	6
United States and Australasia	5	5	6	1		2
Europe and Canada	4	5	1	2	7	1
Mexico and United States	1	2	1	2		5
Mexico and South America	2	1	8	1	4	6
Miscellaneous	22	15	19	15	11	14
Totals	135	123	145	104	99	120
	Panama Canal net tonnage.			Panama Canal net tonnage.		
United States coastwise	104,152	136,349	46,773	116,482	86,958	43,332
United States and Far East	127,353	91,115	84,873	24,572	19,159	9,413
Europe and United States	63,732	57,229	35,958	62,655	96,647	74,953
United States and South America	38,745	40,368	135,206	33,707	41,217	87,836
Europe and South America	49,830	42,473	44,391	85,435	51,947	74,957
Cristobal and South America	10,947	13,111	29,078	11,759	12,149	28,673
Europe and Australasia	56,151	58,006	43,491	31,395	6,581	43,260
United States and Australasia	22,746	20,487	36,775	4,127		14,915
Europe and Canada	20,914	28,102	4,899	10,431	37,402	5,448
Mexico and United States	4,903	9,946	5,476	13,033		23,240
Mexico and South America	10,362	5,051	38,795	5,051	20,446	32,479
Miscellaneous	65,834	36,780	49,217	42,928	30,888	34,480
Totals	575,669	539,017	554,932	441,575	403,394	472,986
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise	73,967	91,067	53,802	105,134	101,460	35,213
United States and Far East	194,595	116,028	120,887	28,182	23,080	11,280
Europe and United States	31,004	17,313	12,658	91,812	151,491	97,955
United States and South America	13,313	14,878	171,273	31,659	44,225	117,695
Europe and South America	28,989	19,473	28,955	109,202	68,994	92,611
Cristobal and South America	2,089	2,269	10,156	7,436	6,927	18,367
Europe and Australasia	40,269	48,400	29,226	32,981	5,775	32,308
United States and Australasia	27,430	21,659	47,391	1,347		10,720
Europe and Canada	17,233	6,611	1,582	11,916	41,171	7,407
Mexico and United States	11,000	20,300	8,000			4,564
Mexico and South America	18,500	9,000	65,883			
Miscellaneous	58,721	19,683	69,638	16,274	25,636	28,968
Totals	517,110	386,681	619,451	435,943	468,759	457,088

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships, and other noncargo-carrying vessels, are shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British	4	17,972	\$12,939.84	3	15,596	\$11,397.27
French				1	2,096	1,616.25
Norwegian				1	5,051	3,636.72
United States	7	24,780	17,996.25	4	18,897	13,605.84
Japanese	2	9,644	11,412.30			
Panamanian	1	69	51.75			
Totals	14	52,465	42,400.14	9	41,640	30,256.08

LATIN-AMERICAN TRAFFIC.

The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality:

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	20	45,671	56,713	78,983	47,420	\$54,781.20	43,334
United States.....	14	41,411	50,646	63,131	41,207	46,945.39	34,927
Norwegian.....	3	8,533	9,343	12,447	7,911	10,542.85	12,218
German.....	3	7,993	8,895	10,591	6,527	9,749.60	6,174
Danish.....	2	6,316	7,396	9,281	5,929	7,772.25	8,616
French.....	2	5,302	6,076	8,283	5,342	6,448.95	3,600
Dutch.....	2	4,236	6,927	6,832	4,218	5,295.00	4,440
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	757
Japanese.....	1	3,684	4,241	5,850	3,642	4,605.00	3,934
Swedish.....	1	3,430	5,533	5,524	4,225	4,287.50	950
Chilean.....	1	1,811	3,182	3,798	2,272	2,263.75	950
Panaman.....	1	69	69	123	72	51.75	.....
December, 1921.....	52	131,175	164,366	213,863	133,282	156,141.99	119,860
November, 1921.....	45	103,309	129,988	169,286	104,285	122,533.27	75,426
December, 1920.....	90	226,567	278,344	362,876	226,489	.....	318,579

PACIFIC TO ATLANTIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States. equivalent.	Panama Canal net.	Registered			
				Gross.	Net.		
British.....	26	82,363	98,814	128,689	80,947	\$95,720.17	90,281
United States.....	11	27,526	33,344	43,401	28,358	28,335.76	11,291
French.....	2	6,374	7,028	9,622	6,104	6,890.00	7,143
German.....	2	4,996	6,065	8,213	5,123	6,245.00	6,604
Chilean.....	2	4,565	6,624	9,759	5,253	5,706.25	3,456
Norwegian.....	2	5,380	6,230	8,653	5,413	4,852.97	1,025
Dutch.....	2	3,560	5,819	5,880	3,576	4,450.00	8,911
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	4,155
Japanese.....	1	4,468	4,524	6,097	4,454	5,428.80	7,416
Danish.....	1	3,127	4,090	4,950	3,163	3,908.75	6,328
Spanish.....	1	2,414	2,898	3,812	2,771	3,017.50	4,830
Swedish.....	1	1,091	1,227	1,825	1,282	1,363.75	2,121
Panaman.....	1	187	187	187	187	233.75	526
December, 1921.....	54	148,770	182,195	240,108	151,148	169,551.45	154,087
November, 1921.....	44	102,813	135,166	175,481	105,463	121,103.92	123,150
December, 1920.....	85	227,972	286,992	370,782	231,215	.....	262,305

CLASSIFICATION OF COMMERCIAL TRAFFIC.

A statement of this month's commercial traffic, classified by nationality of vessels, is shown in the following tabulations:

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States. equivalent.	Panama Canal net.	Registered			
				Gross.	Net.		
From Atlantic to Pacific.							
British	51	175,910	217,790	274,490	171,575	\$215,884.14	191,631
Chilean	1	1,811	3,182	3,798	2,272	2,263.75	950
Danish	3	9,694	12,615	14,778	9,354	11,994.85	14,495
Dutch	3	8,710	13,838	14,142	8,713	10,887.50	9,866
French	3	8,940	10,246	14,079	9,031	10,996.45	3,960
German	3	7,993	8,895	10,591	6,527	9,749.60	6,174
Japanese	14	54,051	60,875	80,718	52,729	66,883.55	71,579
Norwegian	7	24,769	28,203	34,812	22,583	30,837.85	36,219
Panaman	1	69	69	123	72	51.75	.....
Peruvian	2	2,719	5,345	9,020	4,517	3,398.75	757
Swedish	3	12,041	16,105	17,877	13,329	15,051.25	17,735
United States	44	161,321	198,506	246,074	158,788	193,744.05	163,744
Totals	135	468,028	575,669	720,502	459,490	571,743.49	517,110

Nationality.	No. of ships.	Tonnage.				Tolla.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Pacific to Atlantic.							
British.....	37	131,451	157,717	203,986	129,245	\$156,691.07	157,639
Chilean.....	2	4,565	6,624	9,759	5,253	5,706.25	3,456
Danish.....	2	6,495	9,353	10,447	6,588	8,118.75	12,506
Dutch.....	3	8,420	11,887	13,531	8,372	10,525.00	17,186
French.....	3	10,700	11,391	15,545	9,867	12,143.60	10,784
German.....	2	4,996	6,065	8,213	5,123	6,245.00	6,604
Japanese.....	4	15,741	18,496	24,472	15,743	19,520.05	26,774
Norwegian.....	3	9,903	11,857	15,746	9,892	10,506.72	9,921
Panamanian.....	1	187	187	187	187	233.75	526
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	4,155
Spanish.....	1	2,414	2,898	3,812	2,771	3,017.50	4,830
Swedish.....	1	1,091	1,227	1,825	1,282	1,363.75	2,121
United States.....	43	160,630	198,528	247,454	162,101	194,384.59	179,441
Totals.....	104	359,312	441,575	563,997	360,941	431,854.78	435,943
Combined traffic both ways.							
British.....	88	307,361	375,507	478,476	300,820	372,575.21	349,270
Chilean.....	3	6,376	9,806	13,557	7,525	7,970.00	4,406
Danish.....	5	16,189	21,968	25,225	15,942	20,113.60	27,001
Dutch.....	6	17,130	25,725	27,673	17,085	21,412.50	27,052
French.....	6	19,640	21,637	29,624	18,898	23,140.05	14,744
German.....	5	12,989	14,960	18,804	11,650	15,994.60	12,778
Japanese.....	18	69,792	79,371	105,190	68,472	86,403.60	98,353
Norwegian.....	10	34,672	40,060	50,558	32,475	41,344.57	46,140
Panamanian.....	2	256	256	310	259	285.50	526
Peruvian.....	4	5,438	10,690	18,040	9,034	6,797.50	4,912
Spanish.....	1	2,414	2,898	3,812	2,771	3,017.50	4,830
Swedish.....	4	13,132	17,332	19,702	14,611	16,415.00	19,856
United States.....	87	321,951	397,034	493,528	320,889	388,128.64	343,185
Totals.....	239	827,340	1,017,244	1,284,499	820,431	1,003,598.27	953,053

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	120	523,204	\$527,035.35	95	399,935	\$401,598.70
Ballast (excess fuel).....	2	9,644	11,412.30	1	1,640	1,640.00
Ballast.....	12	42,821	30,987.84	9	41,640	30,256.08
Cruiser.....	1	(*)	2,308.00			
Total commercial.....	135	575,669	571,743.49	104	441,575	431,854.78
Motor ships.....	4	19,968	18,855.00	2	9,717	9,562.50
Motor schooners.....	3	213	215.25	1	72	78.75
Bark.....	1	2,167	1,620.75			
Barge.....	1	3,638	2,713.50			

* Displacement tonnage of 4,616 tons.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Canal free of tolls. If tolls had been assessed against these vessels at commercial rates, the amount paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Canal; these are not included in the commercial traffic:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels:						
Subchasers.....	3	231	\$115.50	3	231	\$115.50
Destroyers.....				11		
Coastal.....	1			2	38,730	19,865.00
Tugs.....	3	2,755	1,377.50	2	1,755	877.50

* Indicates displacement tonnage.

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels—Continued.						
Cruiser	1	* 3,200	\$1,600.00			
Transports	1	* 3,919	4,702.80	1	* 10,000	\$5,000.00
Ammunition ship	1					
Tanker				1		
Gunboat				1	* 2,600	1,300.00
Supply ship				1	5,920	2,960.00
United States Army mine planter	1	46	55.20			
Commercial vessels for repairs	1	5,938	5,532.50	1	5,938	5,532.50
Launches	3	3	3.15	1	4	3.00

* Indicates displacement tonnage.

* Indicates registered net tonnage.

Cargo through the Canal free of tolls:

Atlantic to Pacific	tons	16,742
Pacific to Atlantic	tons	2,035

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of December, 1921, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving	41,580	41,495	83,075
Local cargo shipped	2,404	476	2,880
Transit cargo arriving	967,218	957,859	1,925,077
Transit cargo clearing	971,027	957,786	1,928,813
Cargo received for transshipment	19,320	200	19,520
Cargo transshipped	22,329	127	22,456
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received	33,019	4,098	37,117
Dispatched	23,642	678	24,320
Rehandled	956	171	1,127
Stevaged	26,738	1,816	28,554
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad	71	5	76
Panama Railroad vessels	7		7
United States Army vessels	2	1	3
Total vessels supplied with bunker coal	80	6	86
Coal supplied to above vessels:			
Commercial, other than Panama Railroad	21,846	151	21,997
Panama Railroad vessels	1,228		1,228
United States Army vessels	53	2	55
Total coal supplied to vessels	23,127	153	23,280
Coal issues, miscellaneous:			
Panama Canal departments	664	214	878
Panama Railroad, excepting vessels	578		578
United States Army, excepting vessels	303		303
Individuals and companies	377		377
Total issues from Panama Canal deposits:			
December, 1921	25,049		25,416
November, 1921	15,878	1,962	17,840
December, 1920	42,606	4,562	47,168
Coal on hand, January 1, 1922	164,663	29,899	194,562
Coal on hand, December 1, 1921	152,187	32,626	184,813
Coal received during December	37,525	9,678	47,203
Transferred to United States Navy coal account		12,038	12,038
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels	1,109	962	2,071
Coal on hand, January 1, 1922	63,912	18,558	82,370
Coal on hand, December 1, 1921	71,127	7,482	78,609
Received during December, 1921		12,038	12,038
Transferred to Panama Railroad	6,206		6,206
Fuel oil issues:			
Panama Canal departments	4,959	18,837	23,796
Panama Railroad	3,502		3,502
Army and Navy	391	524	915
Total issues and sales	8,852	19,361	28,213

	Cristobal.	Balboa.	Total.
Fuel on hand, January 1, 1922.....	bbls. 55,793	70,459	126,252
Fuel on hand, December 1, 1921.....	bbls. 59,905	33,363	93,268
Received during December, 1921.....	bbls.	52,256	52,256
Diesel oil issued during December, 1921.....	bbls. 15	.....	15
Diesel oil on hand, January 1, 1922.....	bbls. 50,956	954	51,910
Diesel oil on hand, December 1, 1921.....	bbls. 50,971	954	51,925
Oil pumped for individuals and companies.....	bbls. 342,936	197,503	540,439
Miscellaneous transfers.....	bbls. 7,111	382	7,493
Total oil handled.....	bbls. 358,914	217,247	576,161
Admeasurement certificates:			
United States equivalent issued or made.....	20	.....	20
Measured for Panama Canal net tonnage.....	11	6	17
United States equivalent or Panama Canal net tonnage corrected.....	23	6	29
Services of harbor equipment:			
Tugs, total operating hours.....	446	268	714
Launches, total operating hours.....	1,195	1,158	2,353
Vessels repaired at Panama Canal shops:			
Commercial.....	36	11	47
United States Government.....	5	9	14
Canal equipment.....	14	24	38
Vessels dry-docked:			
Commercial.....	2	4	6
Government.....	2	.....	2
Canal equipment.....	6	9	15
Clearances issued.....	165	140	305
Bills of health issued.....	149	143	292

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal:

Ships entering.	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
All vessels, including those transiting the Canal.....	301	1,638,327	1,046,918	262	1,403,493	904,289
Vessels entering port but not transiting the Canal.....	52	255,656	155,343	6	26,282	16,278
Vessels transiting Canal and handling passengers or cargo.....	59	306,860	193,915	59	303,362	187,224
Ships clearing.						
All vessels, including those transiting the Canal.....	307	1,661,574	1,061,563	263	1,404,391	906,833
Vessels entering port but not transiting the Canal.....	57	277,504	169,165	7	27,015	16,667
Vessels transiting the Canal and handling passengers or cargo.....	59	301,111	190,303	59	302,042	186,995

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of December, 1921:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to—						
U. S. Government vessels.....	\$153.10	\$124.82	\$1,239.47	.....	\$137.26	\$1,654.65
Panama Railroad vessels.....	41.40	112.24	6,522.91	.....	545.47	8,222.02
Other commercial vessels.....	1,226.03	4,261.97	16,796.35	.....	993.65	23,278.00
Totals, December, 1921.....	1,420.53	5,499.03	24,558.73	.....	1,676.38	33,154.67
Totals, November, 1921.....	1,449.64	5,296.31	21,260.75	.....	1,528.98	29,535.68
Totals, December, 1920.....	3,802.97	17,543.60	57,203.07	\$7,467.62	3,990.54	80,007.80

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Balboa to—						
U. S. Government vessels..	\$162.66	\$3,087.73	\$8,447.06		\$121.45	\$11,818.90
Other commercial vessels..	187.08	728.10	7,250.83	\$2,319.83	246.49	8,412.50
Totals, December, 1921.....	349.74	3,815.83	15,697.89	2,319.83	367.94	20,231.40
Totals, November, 1921.....	365.22	598.34	6,015.29	2,882.26	198.64	10,059.75
Totals, December, 1920.....	1,268.44	6,751.81	26,819.56	734.15	1,966.75	37,540.71

MOVEMENT OF PASSENGERS.

The following statements shows the number of passengers arriving and embarking at Canal ports during the month of December, 1921:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.....	1,056	910	1,966	123	2	125
From Pacific ports.....	144	54	198	147	176	323
Total disembarking.....	1,200	964	2,164	270	178	448
Embarking:						
For Atlantic ports.....	1,056	964	2,020	5		5
For Pacific ports.....	222	74	296	207	86	293
Total embarking.....	1,278	1,038	2,316	212	86	298
Remaining on board vessels:						
From Atlantic to Pacific ports.....	804	1,200	2,004	830	1,257	2,087
From Pacific to Atlantic ports.....	900	822	1,722	597	892	1,489
From Atlantic to Atlantic ports.....	237	125	362			
From Pacific to Pacific ports.....				38	152	190
Total remaining on board.....	1,941	2,147	4,088	1,465	2,301	3,766
Total passengers arriving.....	3,141	3,111	6,252	1,735	2,491	4,226
Total passengers departing.....	3,219	3,185	6,404	1,668	2,414	4,082

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water, for lockages for the month of December, 1921, as compared with that of the preceding month and of the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Colon.....	99	126	225	15	8	23	248
Pedro Miguel.....	102	130	232	19	18	37	269
Miraflores.....	102	122	224	17	15	32	256
Total lockages, December, 1921.....	303	378	681	51	41	92	773
Total lockages, November, 1921.....	291	365	656	44	37	81	737
Total lockages, December, 1920.....	336	413	749			39	788

NUMBER OF VESSELS PUT THROUGH THE LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Colon.....	105	140	245	36	25	61	306
Pedro Miguel.....	106	135	241	52	42	94	335
Miraflores.....	107	135	242	52	44	96	338
Total vessels, December, 1921.....	318	410	728	140	111	251	979
Total vessels, November, 1921.....	295	383	678	92	86	178	856
Total vessels, December, 1920.....	359	453	812			76	888

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	35	35	35
Canal equipment.....	26	59	60
Total noncommercial vessels.....	61	94	95

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
Lockages.....	<i>Cubic feet.</i> 964,180,000	<i>Cubic feet.</i> 950,720,000	<i>Cubic feet.</i> 810,140,000
Leakage.....	20,000,000	15,000,000	67,000,000
Maintenance.....		4,090,000	7,620,000
Total consumption, December, 1921.....	984,180,000	969,810,000	884,760,000
Total consumption, November, 1921.....	869,420,000	894,560,000	850,440,000
Total consumption, December, 1920.....	1,183,140,000	968,970,000	974,870,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorologic and hydrographic conditions over the Canal Zone and vicinity during the month of December, 1921, are shown in comparative form:

Rainfall.	December, 1921.	December, 1920.	December—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Total for month:					
Pacific Section.....	4.25	1.98	12.18	1.06	5.04
Central Section.....	5.50	2.54	16.43	.71	5.83
Atlantic Section.....	9.00	4.08	39.34	1.85	12.02
Maximum recorded on any one day.....	4.12	2.81	10.86		
Gatun Lake watershed.....	7.81	3.19	26.20	1.15	5.05
Chagres River watershed above Alhajuela.....	6.96	4.05	37.54	1.29	8.88
Maximum recorded for month at any one point.....	13.86	8.02	58.17		
Minimum recorded for month at any one point.....	2.94	1.31			
<i>Hydrography.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	3,641	2,180	17,300	1,265	3,866
Maximum momentary discharge for month.....	25,600	21,200	170,000		
Gatun Lake watershed total yield.....	8,211	4,322	9,923	3,005	6,072
Gatun Lake watershed net yield.....	7,649	3,698	9,218	2,158	5,473
Draft on Gatun Lake for lockages and power.....	2,167	2,378	2,378	583	1,738

¹ This represents the maximum 24-hour rainfall recorded on the Isthmus since American occupation. Recorded at Porto Bello on December 28-29, 1909.

² This figure represents the maximum momentary discharge on record. Occurred on December 26, 1909.

SEISMOLOGY.

Seismic tremors were recorded on the 18th and 22d. The disturbance recorded on the morning of the 18th was at a distance of about 950 miles and gave evidence of being a severe quake at the origin, which was probably to the southwest in the Pacific. The disturbance on the evening of the 22d was a pronounced local shock which was felt by the people in general. The epicenter of the disturbance was at a distance of about 45 miles and probably to the southwest. No damage to Canal works was reported.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., is shown in the following tabulation:

	December, 1921.	November, 1921.	December, 1920.
Gross output, KWH:			
Gatun hydroelectric station.....	4,942,900	4,853,900	6,079,700
Mirafllores steam plant.....	300	400	65,200
Combined gross output.....	4,943,200	4,854,300	6,114,900
Water consumption..... cubic feet..	3,883,984.374	3,779,696,146	4,377,432,000
Oil consumption..... barrels.....	1,882	1,827	2,617
Power distributed to consumers..... KWH..	4,235,893	4,137,872	5,180,701
Loss of power in plant auxiliaries, transmission, and transformation..... KWH..	707,307	716,428	934,199
Per cent of loss of power to gross output.....	14.3	17.3	16.1

Miscellaneous electrical repairs and installations of electrical equipment were made on 11 vessels at Cristobal, and 5 vessels at Balboa during the month. There were 358 work orders issued for work to be performed by the Electrical Division during the month, as compared with 328 for November. No new construction work was performed during the month.

SHOP, FOUNDRY, AND DRY DOCK WORK.

The output of the Mechanical Division in patterns and castings for December, 1921, as compared with the preceding month was as follows:

	December, 1921.			November, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	2	175	8,612	1	304	17,456
Steel.....	1				73	11,896
Brass.....	10	60	1,392	3	286	5,902

During the month miscellaneous repairs were made on 55 vessels at Cristobal and 44 vessels at the Balboa shops. Of the above vessels, 10 were placed in dry dock at Cristobal, and 13 at Balboa.

The bottom of the steamship *Quibdo* was cleaned and painted. The stern bushing was renewed, propeller was changed, shoe repaired, liner on tail shaft installed and hull was patched.

A general overhaul of the motor ship *Chiralte* was carried out.

It was intended to install new engines in the vessel, but it was found feasible to overhaul her original installation, fitting new propeller shafts and thrust blocks and make a better installation than by carrying out the proposed change. Extensive hull repairs were also performed.

The tanker *K. R. Kingsbury* was dry-docked with a full cargo of lubricating oil on board, for the purpose of renewing one of the propeller blades. This was a very large vessel and the weight of the cargo, together with its fluid nature, made the dry-docking a very unusual one and almost without precedent. Three tiers of shores were used to prevent deformation of the hull and the water was only lowered to the propeller hub. The operation was entirely successful. This vessel transited the Canal from Balboa to Cristobal on December 17 as a commercial vessel, on which transit tolls were assessed; after leaving Cristobal trouble developed and she put back to port for repairs; she made the transit of the Canal from Cristobal to Balboa where the repairs were carried out and then returned through the Canal from Balboa to Cristobal, and in accordance with Executive Order of November 17, 1921, exempting from payment of tolls vessels which make the transit from Cristobal to Balboa and return for the sole purpose of having repairs made at the Balboa dry dock, no tolls were assessed for these 2 transits; this is the first vessel which has transited the Canal for repairs only on which no tolls were assessed.

Work was started on the rebuilding of the tug *Mariner* and her conversion into an oil burner.

Dry-docking and overhaul of the Dredging Division fleet continued during the month.

The reductions which have been taking place in the Mechanical Division during the past months have brought the working force down to 30 per cent of force employed 1 year ago. Owing to changes in schedules on the Panama Railroad, a further reduction has been made in the roundhouse and car shop forces.

DREDGING DIVISION.

Cucaracha and Barge Repair slides showed no perceptible movement during the month. West Culebra slide showed some bank movement between stations 1774:08

and 1779:00. A total of 115,850 cubic yards of material was removed from in front of this slide during the month. No inconvenience to Canal traffic was occasioned by reason of slides during the month.

The total excavation for the month of December, 1921, including earth and rock, was 303,450 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment.
	Earth.	Rock.			
115,850	37,050	78,800	Maintenance.....	<i>Gaillard Cut, West Culebra.</i> 1774-00 to 1795-00 C. L. and W.....	<i>Gamboa.</i>
25,000	10,000	15,000	Maintenance.....	<i>Pacific Entrance.</i> 2233-00 to 2166-00 E.....	<i>Cascadas.</i>
6,000		6,000	Construction.....	2233-00 to 2166-00 E.....	<i>Cascadas.</i>
				2075-50 to 2085-00.....	
81,300	81,300		Maintenance.....	2095-00 to 2100-80 C. L.....	<i>No. 84.</i>
51,900	51,900		Maintenance.....	2240-00 to 2250-00 W.....	<i>No. 86.</i>
				2219-50 to 2230-60 W.....	
				<i>Balboa Inner Harbor.</i>	
10,800	5,800	5,000	Maintenance.....		<i>Cascadas.</i>
1,200	1,200		Maintenance.....		<i>No. 84.</i>
11,400	11,400		Maintenance.....		<i>No. 86.</i>
303,450	198,650	104,800			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	115,850
Dumped on San Juan fill.....	64,500
Dumped on flats east of Canal.....	46,500
Dumped on flats west of Canal.....	34,800
Dumped at sea, Pacific entrance.....	41,800
Total.....	303,450

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	December, 1921.	November, 1921.	December, 1920.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	663,173,000	648,258,750	826,642,025
Filtration plants.....	391,375,000	382,858,000	506,947,000
Water consumed by Panama City.....	90,888,000	93,862,000	92,764,000
Water consumed by Colon.....	42,337,000	48,221,250	81,350,350
Sales of water to vessels.....	10,993,100	10,220,274	15,772,165

Construction work, as itemized herein, was under progress during the month, with completion on November 30 and December 31, as shown:

	Per cent completed.	
	Nov. 30.	Dec. 31.
Fill, France Field.....		99½
Grading of Silver City, Mount Hope.....	90	92
Construction of landing field at Naval Air Station, Coco Solo.....		2
Construction of new concrete sea wall, Santo Tomas Hospital.....	97	98
Extension of roads, New Santo Tomas Hospital.....	30	60
Foundation of statue of Balboa.....	79	79
Extension of sea wall, New Santo Tomas Hospital.....	35	55
Installation of electric duct line, New Santo Tomas Hospital.....	30	60

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	December 31, 1921.			Total occupants.		
	Men.	Women.	Children.	December, 1921.	November, 1921.	December, 1920.
Americans.....	2,468	1,986	2,146	6,600	7,081	8,400
Europeans.....	130	40	90	260	275	277
West Indians.....	4,774	2,503	5,446	12,723	12,711	11,182
Totals, December, 1921.....	7,372	4,529	7,682	19,583	.....	.....
Totals, November, 1921.....	7,612	4,658	7,797	.....	20,067	.....
Totals, December, 1920.....	8,459	4,415	6,985	.....	.....	19,859

WORKING FORCE.

The following tabulation shows the number of gold and silver employees as of December 21, 1921, by departments, together with a comparison of the working force for the preceding month and that of December, 1920:

	Employees as of December 21, 1921.		Total employees.		
	Gold.	Silver.	December, 1921.	November, 1921.	December, 1920.
Operation and Maintenance:					
Office.....	29	35	64	62	66
Electrical.....	151	153	304	315	471
Municipal Engineering.....	80	477	557	614	998
Lock Operation.....	192	685	877	727	812
Dredging.....	135	646	781	873	1,321
Mechanical.....	390	605	995	1,219	2,880
Marine.....	163	360	523	534	718
Fortifications.....	40	200	240	222	526
Totals.....	1,180	3,161	4,341	4,566	7,792
Supply Department:					
Quartermaster.....	166	1,077	1,243	1,237	2,536
Subsistence.....	19	225	244	251	405
Commissary.....	180	908	1,088	1,113	1,746
Cattle Industry—Plantations.....	12	167	179	180	371
Hotel Washington.....	8	82	90	91	100
Totals.....	385	2,459	2,844	2,872	5,158
Accounting Department.....	192	7	199	199	257
Health Department.....	218	731	949	966	1,070
Executive Department.....	511	245	756	779	829
Totals.....	921	983	1,904	1,944	2,156
Panama Railroad:					
Superintendent.....	45	240	285	321	576
Transportation.....	74	105	179	181	302
Receiving and Forwarding Agency.....	65	790	855	891	1,569
Coaling stations.....	89	430	519	473	1,196
Totals.....	273	1,565	1,838	1,866	3,643
Grand totals, December, 1921.....	2,759	8,168	10,927	.....	.....
Grand totals, November, 1921.....	2,906	8,342	.....	11,248	.....
Grand totals, December, 1920.....	4,266	14,483	.....	.....	18,749

* Includes 643 employees of former Building Division.

SCHOOLS.

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone, for the month of December, 1921:

	White.	Colored.	Total.
gross enrollment.....	1,876	1,538	3,414
net enrollment.....	1,824	1,509	3,333
average daily attendance.....	1,606.1	1,166.9	2,773
pupils neither absent nor tardy.....	930	412	1,342
number of cases of tardiness.....	261	106	367
number of teachers.....	78	32	110

VITAL STATISTICS.

A total of 192 deaths occurred during the month of December, 1921, among the population of the Canal Zone and the cities of Panama and Colon, which is equivalent to an annual death rate of 18.62 per thousand. The 3 leading causes of death were tuberculosis, pneumonia, and diarrhea and enteritis; these 3 diseases caused 49 per cent of all deaths from disease. There were 4 deaths from malaria, 1 from dysentery and 1 from influenza. Of the total deaths, 83, or 43 per cent, occurred among children under 5 years of age. There were 15 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 251 live births reported during the month, and 20 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 35.95 per thousand population. Deaths among children under 1 year of age numbered 57, giving an infant mortality rate, based on the number of births reported for December, of 162.39 per thousand live births.

Eighty-nine cases of malaria were reported during the month, of which 20 were employees and 69 were nonemployees. These malarial cases originated as follows: Panama, 5; in Colon, 2; in the Canal Zone, 59; and outside of the Canal Zone, 23.

Among other diseases reported during the month were 17 cases of measles, 3 of smallpox, 7 of scarlet fever, 5 of diphtheria, 31 of pneumonia and 1 of beriberi.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, are shown below in comparative form:

	December, 1921.	November, 1921.	December, 1920.
Materials received on United States requisitions, chargeable as follows:			
Operation and Maintenance.....	\$111,827.15	\$41,683.19	\$702,316.63
Construction and equipment.....	787.00		14,256.30
Miscellaneous.....	4,925.88	3,866.24	18,440.92
Totals.....	117,540.03	45,549.43	735,013.85
Cash sales on the Isthmus:			
Stock.....	26,728.27	20,416.26	84,435.07
Fuel oil (including sales to ships).....	25.97	818.65	105,205.82
Scrap.....	923.41	617.57	1,620.11
Obsolete and second hand material.....	2,857.30	1,964.37	1,009.45
Totals.....	30,534.95	23,816.85	142,270.45
Sales to steamships from storehouses:			
Miscellaneous stock items.....	6,094.19	5,497.93	17,148.83
Fuel oil.....	25.97	776.15	73,499.59
Totals.....	6,120.16	6,274.08	90,648.42

FINANCIAL RECEIPTS AND EXPENDITURES.

	December, 1921.	November, 1921.	December, 1920.
Cash balance available for expenditure in Canal appropriations.....	\$11,866,501.01	\$12,255,599.42	\$14,863,922.53
Payments made from appropriations:			
By Paymaster on the Isthmus.....	955,330.79	1,024,183.32	1,511,443.46
By Disbursing Clerk, Washington.....	171,583.21	204,593.51	983,635.92
To Panama Railroad (for commissary books).....	187,222.98	200,700.36	353,041.84
Collections on the Isthmus:			
Repaid to appropriations.....	535,261.14	690,179.71	887,022.72
Commissary and other trust funds.....	188,742.61	202,245.56	354,644.48
Tolls.....	1,003,604.42	923,061.65	1,007,875.07
Sales of water.....		3,834.15	3,199.55
Postal receipts.....	13,905.80	9,365.99	14,113.93
Licenses, taxes, court fees, fines, etc.....	8,894.07	3,466.97	7,410.30
Sale of construction material and equipment.....			7.70
Total collections on Isthmus.....	1,750,408.04	1,832,154.03	2,274,273.65
Collections by Disbursing Clerk, Washington, D. C.....	13,941.69	154,010.82	40,540.32
Deposits made with Assistant Treasurer, United States.....	64,750.00	73,700.00	86,000.00

FINANCIAL RECEIPTS AND EXPENDITURES—continued.

	December, 1921.	November 1921.	December, 1920.
Canal Zone and miscellaneous funds:			
Receipts—			
Money order funds	\$114,179.68	\$123,412.13	\$163,329.82
Clubhouse funds	31,026.27	28,084.14	32,833.35
Trust funds	68.88	256.59	2,129.60
Interest	1,348.08	1,494.27	799.25
Total receipts	146,622.91	153,247.13	199,092.02
Disbursements:			
Money order funds	81,750.00	164,072.40	21,950.00
Clubhouse funds	28,069.94	30,228.60	40,160.31
Trust funds	592.54		1,151.32
Interest	603.51	706.71	604.42
Postal savings			1.00
Total disbursements	111,015.99	195,007.71	63,867.04
Pay roll on the Isthmus:			
Maintenance and Operation	673,003.11	668,937.59	1,156,436.91
Sanitation	72,390.29	72,837.42	82,354.76
Civil Government	67,916.07	67,512.72	66,325.38
Totals	813,309.47	809,287.73	1,305,117.05
Requisitions for purchases in the United States	42,052.73	32,881.37	199,640.18
Sale of commissary supplies:			
To The Panama Canal	96,423.00	81,989.73	144,549.04
To steamships, other than those of the United States Government and Panama Railroad	32,754.95	28,929.44	75,895.60
To the Panama Railroad, including its steamships and Hotel Washington	21,396.32	20,769.09	39,393.41
To the United States Government including the Army and Navy	100,030.12	90,652.00	138,524.08
To individuals and companies through charge accounts	31,011.02	24,274.56	31,243.02
To individuals purchasing coupons	403,042.47	319,944.39	677,518.79
Totals	684,657.88	566,559.21	1,107,123.94

Respectfully,

M. L. WALKER,

*Acting Governor.***Shipment of Canadian Wheat Through the Panama Canal.**

According to an Ottawa correspondent of the *Nautical Gazette*, the expectation that Vancouver will in time become a great grain shipping port may soon be realized. Business interests in Vancouver have been endeavoring to work up this trade, and have predicted that the Pacific ports will eventually become the export outlets for all Canadian grain from Alberta westward. As the present season advanced the prospects for a big business this winter continued to improve. It was noted in Calgary recently that two-thirds of the cars of wheat inspected there were destined for the Pacific coast.

The first cargo of Canadian wheat to pass through the Panama Canal was carried by the steamer *Buenos Aires* of the Johnson Line, which made the transit on February 9, 1921. The route via Vancouver and Panama will always afford an outlet for wheat from western Canada which can not be moved to the Atlantic seaboard before the close of navigation on the Great Lakes and the St. Lawrence River. This winter trade now seems assured, and it is quite possible that the new route may compete with the old for fall as well as winter shipments.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, December, 1921.

From—	NORTH AMERICA.										EUROPE.										Grand totals.	East coast of South America.	Per cent of total cargo.
	UNITED STATES.																						
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	Mexico.	Canada.	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Norway.	Europe.*	Total, Europe.				
SOUTH AMERICA:																							
Chile.....	3,886	16,816	2,121	22,823		31			22,854	9,550	50	3,000	17,976	2,252	4,462	10,231		11,205	53,726		81,580	18.7	
Colombia.....	802			802		2,491			3,293											14	3,307	0.8	
Ecuador.....	2,295			2,295		3,599			5,894	247			7	829				150	1,233		7,127	1.6	
Peru.....	2,768			2,768		3,465			6,233	39,057	1,897	28		136			4,723	1,339	47,180		53,413	12.2	
West coast of South America.....	1,018			1,018					1,018	1,918				65					983		3,001	0.7	
Total, South America.....	10,760	16,816	2,121	29,706		9,586			39,292	50,772	1,947	3,028	17,983	3,282	4,462	10,231	4,723	12,694	108,122		14,143,428	34.0	
NORTH AMERICA:																							
West coast of United States.....	89,391	4,087	6,527	100,005	925	184	2,526		103,640	42,317	1,349	471	2,083	3,426	4,354	7,668	8,896	32,055	102,619		206,259	47.3	
West coast of Canada.....	3,585			3,585					3,585	630	386		68						1,084		4,669	1.1	
West coast of Central America.....						2,010			2,010	353				237					590		2,600	0.6	
Total, North America.....	92,976	4,087	6,527	103,590	925	2,194	2,526		109,235	43,300	1,735	471	2,151	3,663	4,354	7,638	8,896	32,055	104,293		213,528	49.0	
ASIA:																							
China.....	10,859			10,859	3,510				14,369												14,369	3.3	
Japan.....	1,720			1,720					1,720												1,720	0.4	
Philippines.....	11,194			11,194					11,194												11,194	2.6	
Far East.....	3,195			3,195					3,195												3,195	0.7	
Total, Asia.....	26,968			26,968	3,510				30,478												30,478	7.0	
AUSTRALASIA:																							
Australia.....	46			46					46	3,636									3,636		3,682	0.8	
New Zealand.....	1,677			1,677					292	1,969	10,629								16,629		18,598	4.3	
Australasia.....	2,142			2,142					390	2,532	3,816							8,900	12,716		15,218	3.5	
Total, Australasia.....	3,865			3,865					682	4,547	24,081							8,900	32,981		37,528	8.6	
HAWAII:																							
Hawaii.....	5,981			5,981					5,981												5,981	1.4	
Grand totals.....	140,559	20,903	8,648	170,110	4,435	11,780	2,526	682	189,533	118,153	3,682	3,499	20,134	6,945	8,816	17,839	13,619	53,649	245,396		14,435,943	100.0	
Per cent of total cargo, December, 1921.....	32.3	4.8	2.0	39.1	1.0	2.7	0.6	0.1	43.5	27.1	0.9	0.8	4.6	1.6	2.0	4.1	3.1	12.3	56.5		100.0		
Per cent of total cargo, November, 1921.....	26.9	0.8	0.7	38.4	1.1	1.8			41.3	27.9	0.9	1.4	4.8	1.6	1.0	6.9		16.4	58.6		100.0		
Per cent of total cargo, December, 1920.....	25.1	10.7	3.3	39.1	1.8	4.3			45.2	30.3	6.7	1.9	3.9	2.7				0.5	50.6		100.0		

* General cargo not routed so as to allow segregation between definite ports.

* Figures represent tons of 2,240 pounds.

From—

From—	SOUTH AMERICA.					NORTH AMERICA.					ASIA.				AUSTRALASIA.				Grand totals.	Per cent of total cargo.			
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America.	Total, South America.	United States.	West coast of Canada.	West coast of Central America.	Balboa, C. Z.	Mexico.	Total, North America.	China.	Japan.	Philippines.	Far East.	Total, Asia.	Australia.			New Zealand.	Australasia.	Total, Australasia.	Hawaii.
UNITED STATES:																							
North Atlantic ports.	818	826	1,191	7,526	2,803	13,164	53,228	205	52	9,677		53,435	11,240	65,737	6,598	48,574	132,149	10,574	2,697	4,911	18,182	5,007	221,987
South Atlantic ports.							106					9,783	3,143	5,824		1,820	10,787						20,570
Gulf ports							16,060					16,060	14,938	51,899			66,837						93,997
Total, United States.	818	826	1,191	7,526	2,803	13,164	69,394	205	9,729			79,328	20,321	123,460	6,598	50,394	209,773	10,574	2,697	16,011	29,282	5,007	336,554
East coast of Mexico.	18,500					18,500	11,000			7,600	3,200	21,800											40,300
Atlantic terminus, Cristobal, C. Z.												4,845											7,158
West Indies.	70	340	20		1,953	2,913	725	204,100		7,943		11,673											11,743
East coast of Canada.			5			5													2,600	1,738	4,338		4,343
Total, North America	19,388	1,166	1,216	7,526	4,756	34,052	81,349	3,725	4,100	25,272	3,200	117,646	20,321	123,460	6,598	50,394	209,773	10,574	5,297	17,749	33,620	5,007	400,098
EUROPE:																							
Belgium.	375		560		431	1,366	4,415	1,325				3,740											7,506
British Isles	4,841			3,126	1,870	9,837	13,469	1,740			25	15,234											63,926
Denmark.					3,840	3,840																	3,840
France.	767			103	870	870	219					219											1,859
Germany.	1,185		277	850	6,157	8,469	1,330	921				2,251											10,720
Holland.							1,130					1,130											1,130
Italy.							221					221											221
Spain.	23			11	34	34																	34
Sweden.					454	454																	454
Europe.	461		496	460	2,004	3,421	14,189	643		400		15,232											18,654
Total Europe.	7,652	1,333	4,550	14,756	28,291	34,973	3,708	921	400	25	40,027								24,234	9,000	33,234	6,021	107,573
East coast, South America																							9,439
Grand totals	27,040	1,405	2,546	12,076	19,512	62,582	125,285	7,433	5,021	25,672	3,225	166,636	20,321	123,697	6,598	50,394	210,010	10,574	29,531	26,749	66,854	11,028	517,110
Per cent of total cargo.																							
December, 1921.																							
Per cent of total cargo.	5.2	0.3	0.5	2.3	3.8	12.1	24.2	1.4	1.0	5.0	0.6	32.2	5.7	23.9	1.3	9.8	40.7	2.0	5.7	5.2	12.9	2.1	100.0
November, 1921.																							
Per cent of total cargo.	2.8	0.2	0.2	3.8	2.6	9.6	34.6	0.5	0.8	2.3		38.2	6.5	17.7	0.9	6.8	31.9	1.3	11.1	5.8	18.2	2.1	100.0
December, 1920.																							
Per cent of total cargo.	35.7	0.3	0.2	3.8	4.8	44.8	12.1	0.1	1.2			17.6	5.9	6.5	2.9	8.6	24.1		7.5	6.0	13.5		

² General cargo not routed so as to allow segregation between definite ports.³ Figures represent tons of 2,240 pounds.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, January 28, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Radames	22	11	28	32	13	15	23	18	24	20	01					General.	3,200	4,971	3,486
Steel Navigator	22	12	22	13	10	22	20	30	22	40				Hamburg.	Coronel.	General.	3,350	7,634	5,553
Robin Gray	22	15	25	16	23	14	24	23	15	30				New York.	Vancouver.	General, steel.	7,946	7,472	5,631
City of Corinth	22	16	23	11	16	23	18	45	23	19	30			Baltmore.	Honolulu.	General.	7,946	7,472	5,631
Frederick Luckenbach	23	9	30	23	11	16	23	18	45	23	19	30		Cardiff.	Plymouth, N.Z.	Coal.	6,180	7,103	5,358
Falls of Clyde	23	9	30	23	13	15	23	21	18	24	20	01		Mobile.	Los Angeles.	General.	3,470	2,987	2,056
Columbia	23	17	11	23	17	24	24	11	36					Tampico.	Balboa.	Oil, pipe fittings.	2,523	1,864	1,669
Yorba Linda	23	10	08	24	6	05	24	12	57	24	21	34		Baltimore.	San Francisco.	General.	2,302	6,015	4,281
Albermarle	23	16	58	24	7	05	24	14	54	24	16	05		Tampico.	Tucupilla.	Fuel oil.	9,400	7,424	5,077
Newport	24	6	30	24	10	56	24	18	20	30	12	55		London.	Talara.	Ballast.	8,491	6,006	
Wheaton	24	14	18	25	6	26	25	13	40	25	18	06		Cristobal.	San Francisco.	General.	2,214	3,173	2,163
Calcutta	24	14	45	25	7	00	25	15	25	28	20	48		New York.	Honolulu.	Army supplies.	5,981	7,050	4,840
Australpeak	25	10	12	25	10	30	25	17	48	25	18	56		Bermuda.	Balboa.	General.	750	4,800	3,426
City of Hankow	24	22	28	25	11	19	25	19	17	25	15	30		London.	Brisbane.	General.	10,000	9,051	6,835
Santa Teresa	24	23	18	25	12	25	25	19	53	25	21	48		New York.	Auckland.	General.	2,313	5,798	4,086
Aysen	30	16	28	26	6	09	26	13	49	26	14	40		Cristobal.	Valparaiso.	General.	621	4,555	3,068
Algerma	17	17	16	26	6	10	26	13	50	26	15	20		Cristobal.	San Diego.	Sulphur.	4,625	4,714	3,401
Erroll	17	17	16	26	7	07	26	13	59	26	16	11		Texas City.	Lyttelton.	Fuel oil.	9,600	7,496	5,311
Lemore	26	5	40	26	8	15	26	16	20	26	17	35		Tampico.	Tucupilla.	General.	8,200	6,929	5,216
Elkton	26	8	40	26	9	03	26	17	25	27	12	30		New York.	Yokohama.	General.	324	1,357	884
Manavi	26	10	00	26	11	25	26	18	28	26	20	10		Cristobal.	Guayaquil.	General.	125	1,488	929
Chapas	25	22	40	26	12	17	26	19	30	26	20	25		Portsmouth.	Salina Cruz.	Cement.	175	5,980	4,409
Hudson	25	14	50	26	12	17	26	19	30	26	20	25		Antwerp.	Tacahano.	General.	6,540	7,983	5,882
Willho	27	19	41	28	6	30	28	13	50	28	14	45		New York.	Tacoma.	General.	183	4,514	2,386
Hualala	27	17	48	28	8	19	28	15	14	28	23	05		Cristobal.	Callo.	General.	4,041	12,896	9,571
Alencio	27	23	19	28	9	35	28	16	42	28	17	40		London.	Wellington.	General.	2,795	2,680	1,507
Puehco	28	2	48	28	11	28	18	09	28	19	32			Barry.	Valparaiso.	Coal and general.	8,400	7,539	5,448
Steel Exporter	28	9	33	28	13	20	28	20	09	28	21	45		Baltimore.	Seattle.	General.	8,400	7,539	5,448

5,460 tons displacement.

*Tug, towing barge No. 460.

*Craiser.

*Transport.

*Schooner.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Brush	22	10	25	22	11	03	22	18	09	22	19	55	American	N. Atl. & Western S. S. Co.	390	0	54	2	23	0	Vancouver	New York	Lumber, general.	4,200	6,161	4,424
Hualaga	22	10	30	22	12	47	22	19	48	28	8	19	Peruvian	Peruvian Line	360	0	44	7	22	0	Callao	Cristobal	(*)	2,066	4,514	2,386
Canadian Mariner	22	17	30	23	6	57	23	15	15	23	17	35	British	Canadian Government	399	4	52	3	16	0	Melbourne	New York	General	2,000	5,808	4,051
Ebro	23	7	00	23	7	59	23	16	12	23	22	30	British	Pacific Steam Navigation Co.	450	3	57	8	25	0	Valparaiso	New York	General	4,402	9,171	6,247
Red Hook	23	9	00	23	9	45	23	17	04	24	9	27	American	Erie Basin Towing & Hoisting Co.	380	3	53	1	22	0	Portland	Galveston	General	4,000	5,057	4,247
Shunko Maru	23	8	30	23	10	46	23	18	58	23	21	59	Japanese	Osaka Shosen Kaisha	425	0	53	6	22	0	Singapore	New York	General	6,895	6,923	5,304
Edward	23	17	00	24	6	48	24	13	55	24	13	55	American	Luckenbach Line	436	6	57	2	22	0	Los Angeles	New York	General	3,600	8,543	6,427
H. M. S. Cambrian	23	19	30	24	7	52	24	15	05	26	16	12	British	British Government	446	7	41	6	16	0	Port Culebra	Bermuda	General	7,950	7,539	5,448
Steel Ranger	24	13	25	24	14	02	24	20	38	24	20	38	American	United States Steel Products Co.	424	2	56	2	24	0	Honolulu	Philadelphia	General	6,815	5,862	4,393
U. S. S. Panther	24	14	05	24	14	38	24	22	15	29	9	25	American	United States Navy	304	0	40	8	16	6	San Diego	Philadelphia	General	7,950	7,249	5,171
Delft	19	20	00	25	6	45	25	15	15	25	15	15	Dutch	Royal Netherlands W. I. Mail	369	9	50	2	26	6	Valparaiso	Amsterdam	General	7,476	5,924	4,392
Delagoa Maru	25	14	10	26	6	46	26	15	04	26	15	04	Japanese	Nippon Yusen Kaisha	420	0	56	0	25	3	Manila, P. I.	New York	General	7,950	7,249	5,171
England Maru	27	8	05	27	9	11	27	17	20	27	20	45	Japanese	Kokusa Kisen Kaisha	385	0	51	0	24	0	Portland, Ore.	Norfolk	Wheat	7,476	5,924	4,392
Algotha	26	19	50	27	9	49	27	17	17	27	17	17	American	United States Government	150	0	34	0			High seas	Cristobal	General	7,950	7,249	5,171
Korsholm	27	21	00	28	8	14	28	16	24	28	16	24	Danish	Rederiaktieselskabet Limpi	316	0	45	5	10	6	Iquique	Freeport, Tex.	Ballast	7,500		
Minnequa	28	2	30	28	8	23	28	17	50	28	21	15	American	Wessel Duval & Co. (S. B.)	390	0	54	2	25	8	Caleta Colosa	New Orleans	Nitrate, ore.	7,500		

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

⁶ Tug. ⁷ For orders.

⁸ Copper, cotton, hides, and cacao.

* Tug. † For orders. * Copper, cotton, hides, and cacao.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Jan. 17	Ansaldo VIII	Italian Line.	High seas.	Jan. 22	Crijnsen	Royal Netherlands W. I. Mail.	Puerto Colombia.
Jan. 22	Atenas	United Fruit Co.	New Orleans via Habana.	Jan. 22	Atenas	United Fruit Co.	Bocas del Toro.
Jan. 23	Caribbean	Panama Railroad Steamship Line.	Cartagena	Jan. 22	Puerto Rico	French Line	Puerto Colombia.
Jan. 24	Heredia	United Fruit Co.	New Orleans.	Jan. 24	Ansaldo VIII	Italian Line	Genoa.
Jan. 25	John Worthington	Standard Oil Co.	Tampico.	Jan. 25	Caribbean	Panama Railroad Steamship Line.	Cartagena.
Jan. 26	Santa Marta	United Fruit Co.	New York via Kingston.	Jan. 25	Heredia	United Fruit Co.	New Orleans via Tela and Habana.
Jan. 26	St. Michel ^a	United Fruit Co.	Colombian ports.	Jan. 26	John Worthington	Standard Oil Co.	Mata Redondo.
Jan. 26	St. Michel ^a	United States Army.	New York.	Jan. 26	Sixsola	United Fruit Co.	New York and Kingston.
Jan. 26	Atenas	United Fruit Co.	Bocas del Toro.	Jan. 26	Santa Marta	United Fruit Co.	New York via Colombia and Jamaica.
Jan. 27	Ulua	United Fruit Co.	New York via Habana and Jamaica.	Jan. 26	Atenas	United Fruit Co.	New Orleans.
Jan. 28	Megantic.	White Star Line.	Kingston.	Jan. 26	Alliance	Panama Railroad Steamship Line.	New York via Haiti.
Jan. 28	San Bruno	United Fruit Co.	Port Limon.	Jan. 26	Bushnell and submarines		
				Jan. 26	St. Michel ^a	United States Navy.	Guantanamo, Cuba.
				Jan. 28	San Bruno.	United States Army.	New York.
				Jan. 28	Ulua.	United Fruit Co.	Boston.
				Jan. 28.		United Fruit Co.	New York via Port Limon and Habana.

PORT OF BALBOA.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
None.				Jan. 24	America	Santiago Sagel	Panama.

* Other than ships passing through the Canal.

Length, Beam, and Draft of Vessels.

Following is a summary of the length, beam, and draft of the commercial vessels passing through the Panama Canal during the calendar year 1921:

Length.	Atlantic to Pacific.	Pacific to Atlantic.	All vessels.	Per cent of all vessels.
Less than 100 feet.....	25	23	48	1.7
100 to 200 feet.....	44	31	75	2.7
200 to 300 feet.....	191	188	379	13.6
300 to 400 feet.....	471	441	912	32.8
400 to 500 feet.....	677	615	1,292	46.4
Over 500 feet.....	43	34	77	2.8
Total ships.....	1,451	1,332	2,783	100.0
Aggregate length..... feet.....	544,149.5	497,468.8	1,041,618.3	
Average length..... feet.....	375.0	373.4	374.3	
Beam.				
Less than 30 feet.....	61	49	110	3.9
30 to 40 feet.....	136	127	263	9.4
40 to 50 feet.....	271	277	548	19.7
50 to 60 feet.....	869	783	1,652	59.4
Over 60 feet.....	114	96	210	7.6
Total ships.....	1,451	1,332	2,783	100.0
Aggregate beam..... feet.....	72,633.7	66,787.7	139,421.4	
Average beam..... feet.....	50.0	50.1	50.1	
Draft.				
Less than 15 feet.....	199	134	333	11.9
15 to 20 feet.....	391	260	651	23.4
20 to 25 feet.....	447	540	987	35.5
25 to 30 feet.....	398	372	770	27.7
30 feet and over.....	16	26	42	1.5
Total ships.....	1,451	1,332	2,783	100.0
Aggregate draft..... feet.....	30,438.4	29,065.0	59,503.4	
Average draft..... feet.....	20.9	21.8	21.4	

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended January 28:

U. S. A. T. *Wheaton*, electric weld and redrive leaky rivets in shell plating near after peak tank; install cement bulkhead; overhaul smokestack in galley and branch pipe connections; weld broken stanchion at gangway entrance; cut holes in Samson posts and repair broken hatch bar; barges *No. 134*; dock and undock; scale and paint bottom and straighten coaming; redrive or renew bad order rivets below water line and test tanks; *No. 132*, dock and undock; scale and paint bottom and renew fender on one side, corner angles; redrive all leaky rivets; calk leaky seams and test tanks below water line; steamships *Laura C. Hall*, manufacture key for flywheel; *Elkton*, braze 1 feed water pipe; *Chiapas*, examine and make repairs to air pump for condenser; reassemble and test out; *Albertolite*, dock and undock; scale, clean, and paint bottom; perform miscellaneous hull, boiler, piping, and deck repairs.

PREVIOUSLY REPORTED.

Motorship *James Timpson*, dock and undock; clean and paint bottom; renew damaged section of keel and miscellaneous repairs in engineer's department; tug *Mariner*, dock and undock; scale and paint bottom and convert from coal burner to oil burner as per specifications.

The following vessels were at the Cristobal shops for repairs during the week ended January 31:

Steamships *Lake Elmont*, clean and steam tanks; make temporary repairs to hull; make minor repairs to machinery, etc.; *Ansaldo VIII*, file reduction gears; remetal pinion bearings; repair jaw coupling, etc; *Allianca*, electric weld boiler as directed; *Newport*, manufacture and install new crosshead for after capstan; schooner *Irene S. Wilkinson*, manufacture 1 set of sails, complete; steamships *Advance*, key up L. P.

and H. P. engines; overhaul fresh water pump and cooling water pumps; key up dynamo and jacking engines; grind in valves of compressor; pack expansion valves; renew furnace door; renew packing in all auxiliaries and other miscellaneous work to place ship in service; *Barima*, remove H. P. piston and manufacture 6 rings; recut dynamo piston grooves; test heating coil; repair copper bilge pipe; weld hawse pipe; repair boiler tubes as directed; fit air pipe to tank and suction pipe from tank to pump; examine all sea valves, rudder, and tail shaft, etc.; *Quilpue*, repair ballast pump; renew after part of bilge suction pipe; repair water pipes; *Oranje Nassau*, repair ash ejector; *Delco*, *Puerto Rico*, *Manavi*, *Aysen*, *Heredia*, *Caribbean*, *Huallaga*, and *Cape Henry*, minor repairs.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending January 28, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Puerto Rico.....	French Line.....		January 22.....		1,290
Venezuela.....	Pacific Mail Steamship Co.....		January 22.....		199
Crijnsen.....	Royal Netherlands W. I. Mail.....		January 22.....		1,063
Atenas.....	United Fruit Co.....	January 22.....	January 22.....	5½	120
Colombia.....	Pacific Mail Steamship Co.....	January 22.....	January 24.....	177	856
Caribbean.....	Panama Railroad Steamship Line.....	January 22.....	January 25.....	640	14
Newport.....	Pacific Mail Steamship Co.....		January 25.....		2,214
Manavi.....	Pacific Steam Navigation Co.....		January 25.....		33
Aysen.....	Chilean Line.....		January 26.....		588
Alianca.....	Panama Railroad Steamship Line.....		January 26.....		1,161
Huallaga.....	Peruvian Line.....	January 22.....	January 28.....	2,066	190
Heredia.....	United Fruit Co.....	January 23.....	January 25.....	717	536
Shunko Maru.....	Osaka Shosen Kaisha.....	January 23.....	January 23.....	11	(²)
Ebro.....	Pacific Steam Navigation Co.....	January 23.....	January 23.....	25	1½
John Worthington.....	Standard Oil Co.....	January 24.....	January 26.....	11,428	(²)
Hudson.....	French Line.....	January 25.....	January 26.....	30	(²)
Santa Marta.....	United Fruit Co.....	January 25.....	January 26.....	124	612
Sixola.....	United Fruit Co.....	January 25.....	January 26.....	(¹)	2
Atenas.....	United Fruit Co.....	January 26.....	January 26.....	1	½
Utua.....	United Fruit Co.....	January 27.....	January 28.....	197	92
San Bruno.....	United Fruit Co.....	January 28.....	January 28.....	50	21

¹ No cargo discharged.

² No cargo laded.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending January 28, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Falls of Clyde.....	General Petroleum Co.....	January 24.....		728	
Newport.....	Pacific Mail Steamship Co.....	January 25.....	January 25.....		9
Wheaton.....	U. S. Army Transport Service.....	January 25.....	January 27.....	6	
Delagoa Maru.....	Nippon Yusen Kaisha.....	January 25.....	January 26.....	180	

¹ U. S. Army transport.

Trial of Use of Currency in Cristobal Commissary Store.

Beginning March 1 it is intended to accept both currency and coupons in payment for goods at the Cristobal commissary store. This is in the nature of a trial, to see if payment by currency alone, with the abandonment of the coupon system, will be satisfactory. No changes will be made in the coupon system at the other commissary stores for the present.

The system to be used at Cristobal involves the use of tickets. At the entrance to the store the customer will be provided with a ticket, on which will be punched the amount purchased in each department. Upon the completion of purchases the customer will go to the cashier and hand in the ticket, along with currency or coupons to pay the total.

Official Circular.

Reduced Rate on Pacific Steam Navigation Company's Vessels.

THE PANAMA CANAL.
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., January 28, 1922.

To all concerned—The Agent of the Pacific Steam Navigation Company informs this office that a reduction of 25 per cent in the fare on the steamships of their company between Cristobal and New York will be allowed employees of The Panama Canal and the Panama Railroad Company stationed on the Isthmus, including the members of their families.

The minimum fare by the steamships *Ebro* and the *Essequibo* for those entitled to the rebate will now be \$109 instead of \$124 as announced in our circular of November 21, 1921.

C. A. McILVAINE,
Executive Secretary.

Typewriters For Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, model 4. Price range from \$20 to \$30. Inspection can be made by applying to Storekeeper, S. D., administration Building, Balboa Heights.

Hours of Departure of Passenger Trains.

Following are the hours of departure of the passenger trains of the Panama Railroad running between the Atlantic and the Pacific:

From Colon: 9.10 a. m., 12.15 p. m., 4 p. m.

From Panama: 7 a. m., 12.15 p. m., 6.10 p. m.

The trains leaving at 12.15 p. m. do not run on Sundays and holidays; the others are daily.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective January 1, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.29
Brass, sheet, average.....	Lb.	.40
Bronze, Tobin, average.....	Lb.	.31
Gasoline, motor grade.....	Gal.	.40
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.175
Oakum, Navy, unspun.....	Lb.	.175
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.25
Oil, engine, gas, light, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.675
Oil, engine, gas, heavy, in barrels.....	Gal.	.65
Oil, engine, gas, extra heavy, in cases.....	Gal.	1.125
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.55
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.16
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.10
Waste, cotton, colored.....	Lb.	.04
Waste, cotton, white.....	Lb.	.175
	Lb.	.20

Invitation for Proposals to Furnish Native Logs to The Panama Canal.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10.30 a. m. Wednesday, February 15, 1922, and then opened, for furnishing The Panama Canal 300,000 feet B. M., more or less, native logs, during a period of one year from date of contract, in accordance with form of agreement, copies of which may be had upon application to the office of the Chief Quartermaster.

Bids must be inclosed in sealed envelope, addressed to The Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., and marked "Proposal for furnishing native logs, to be opened February 15, 1922."

The Panama Canal reserves the right to reject any or all bids.

The successful bidder will be given the first option to purchase, if desired, the launch *Mecca*, and other logging equipment formerly used by The Panama Canal, at reasonable appraised prices. This launch was built for logging purposes and is particularly suitable for same. Launch may be inspected at Monte Lirio.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line), Pacific Mail Steamship Company, and Matson Line. The two last named charge \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address

The Panama Canal Record, Balboa Heights, Canal Zone, or

The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., February 8, 1922. No. 26.

Reduction in Rate on Hides.

The Panama Railroad Steamship Line has reduced the rate on hides from Cristobal or Colon to New York, effective February 1, as follows: Dry, loose, or in bales, from \$1 per 100 pounds to 75 cents per 100 pounds; green salted, in bundles, from 58 cents per 100 pounds to 44 cents per 100 pounds.

Panama Canal Traffic During the Calendar Year 1921.

The traffic through the Panama Canal during the calendar year 1921 was approximately the same as during the calendar year 1920. The total number of vessels, including vessels of the United States Navy and other United States Government vessels exempt from the payment of tolls, was 3,040 in 1921, as compared with 3,035 in 1920.

The vessels in commercial service and the public vessels of foreign nations which paid tolls totaled 2,783 in 1921, against 2,814 in 1920. However, the aggregate net tonnage of these vessels, measured in accordance with Panama Canal rules, was greater than in the previous year, being 11,435,811, as compared with 10,378,265; and the tolls collected in 1921 totaled \$11,261,098 against \$10,295,362 in 1920.

The cargo carried in 1921 was 10,707,005 tons, or slightly less than the 1920 cargo, which totaled 11,236,119 tons.

TRAFFIC OVER PRINCIPAL TRADE ROUTES.

Traffic over the principal trade routes during the year 1921 is summarized in the following table:

TRADE ROUTE STATISTICS—CALENDAR YEAR 1921.

	No. of ships.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Tons of cargo.
East coast of United States to west coast of South America.....	157	401,517	511,162	649,142	397,675	\$489,251.87	417,818
West coast of South America to east coast of United States.....	177	458,971	577,702	743,866	458,317	556,652.70	622,789
Totals.....	334	860,488	1,088,864	1,393,008	855,992	1,045,904.57	1,040,607
United States coastwise (Atlantic to Pacific).....	232	968,720	1,187,939	1,474,157	954,475	1,191,615.35	893,396
United States coastwise (Pacific to Atlantic).....	196	784,511	958,217	1,200,487	784,837	968,890.49	1,050,722
Totals.....	428	1,753,231	2,146,156	2,674,644	1,739,312	2,160,505.84	1,944,118
United States to Far East....	200	812,351	982,770	1,218,673	783,282	1,005,694.15	1,271,575
Far East to United States....	53	210,764	257,274	323,907	206,263	259,779.91	267,106
Totals.....	253	1,023,115	1,240,044	1,542,580	989,545	1,265,474.06	1,538,681
Europe to west coast of South America.....	118	374,541	477,600	590,192	370,710	461,582.01	247,320
West coast of South America to Europe.....	160	540,533	678,485	856,379	536,344	673,231.05	857,107
Totals.....	178	915,074	1,156,085	1,446,571	907,054	1,134,813.06	1,104,427

TRADE ROUTE STATISTICS—CALENDAR YEAR 1921—continued.

	No. of ships.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Tons of cargo.
Europe to west coast of United States.....	130	498,020	604,271	742,993	486,990	\$551,690.03	155,859
West coast of United States to Europe.....	202	785,323	964,865	1,186,825	782,953	977,577.95	1,501,859
Totals.....	332	1,283,343	1,569,136	1,929,818	1,269,943	1,529,267.98	1,657,718
Europe to west coast of Canada.....	22	92,134	117,851	143,425	91,120	110,796.93	59,258
West coast of Canada to Europe.....	35	140,795	182,305	221,945	141,717	175,839.85	252,684
Totals.....	57	232,929	300,156	365,370	232,837	286,636.78	311,942
East coast of United States to Australasia.....	75	318,013	377,470	469,904	307,433	392,546.13	446,101
Australasia to east coast of United States.....	15	55,232	67,595	85,635	54,435	69,040.00	55,835
Totals.....	90	373,245	445,065	555,539	361,868	461,586.13	501,936
Europe to Australasia.....	78	429,376	529,355	653,965	417,402	534,583.40	346,600
Australasia to Europe.....	97	534,996	641,063	800,179	512,957	664,536.40	540,633
Totals.....	175	964,372	1,170,418	1,454,144	930,359	1,199,119.80	887,233
Cristobal to west coast of South America.....	129	112,989	191,798	266,609	148,619	137,779.79	39,497
West coast of South America to Cristobal.....	131	112,588	190,044	265,608	147,849	140,657.95	90,183
Totals.....	260	225,577	381,842	532,217	296,468	2,784,437.74	129,680
Cristobal to west coast of Central America.....	31	20,774	23,078	38,354	21,042	24,999.80	14,290
West coast of Central America to Cristobal.....	34	22,772	25,258	41,664	23,093	30,519.30	14,815
Totals.....	65	43,546	48,336	80,018	44,135	55,519.10	29,105
Cristobal to west coast of United States.....	21	32,801	39,739	53,058	32,479	40,598.75	26,245
West coast of United States to Cristobal.....	23	42,288	49,705	66,381	41,942	48,747.05	15,432
Totals.....	44	75,089	89,444	119,439	74,421	89,345.80	41,677
Mexico to west coast of South America.....	39	169,471	198,042	265,392	167,799	211,276.50	348,626
West coast of South America to Mexico.....	44	191,912	221,251	301,433	191,360	160,436.53	230
Totals.....	83	361,383	419,293	566,825	359,159	371,713.03	348,856
Mexico to west coast of United States.....	26	112,706	130,037	174,775	110,358	138,569.88	230,259
West coast of United States to Mexico.....	30	138,123	155,743	208,028	134,851	117,234.56	5,388
Totals.....	56	250,829	285,780	382,803	245,209	255,804.44	235,647
East coast of United States to west coast of Canada.....	12	41,249	51,149	64,059	40,837	48,296.77	34,148
West coast of Canada to east coast of United States.....	10	40,675	47,783	58,564	39,670	50,724.80	50,420
Totals.....	22	81,924	98,932	122,623	80,507	99,021.57	84,568
East coast of United States to Balboa.....	14	68,755	79,566	108,169	68,477	85,858.80	110,907
Balboa to east coast of United States.....	10	57,274	66,000	87,960	56,550	47,663.67	.....
Totals.....	24	126,029	145,566	196,129	125,027	133,522.47	110,907
United States coastwise (foreign) Atlantic to Pacific.....	15	60,177	69,842	80,511	57,546	70,523.13	.....
United States coastwise (foreign) Pacific to Atlantic.....	3	8,991	12,222	14,174	8,878	11,238.75	20,145
Totals.....	18	69,168	82,064	100,685	66,424	81,761.88	20,145

Newport News for orders.




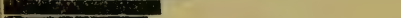










TRADE ROUTE STATISTICS—CALENDAR YEAR 1921—continued.

	No. of ships.	United States equivalent.	Panama Canal net.	Registered gross.	Registered net.	Tolls.	Tons of cargo.
East coast of United States to west coast of Central America.....	1	719	730	818	708	\$378.40	6
West coast of Central America to east coast of United States.....	4	3,073	3,291	4,534	3,007	2,655.72	589
Totals.....	5	3,792	4,021	5,352	3,715	3,534.12	595
Mexico to Balboa.....	2	8,102	9,692	13,589	8,392	10,127.50	16,600
Balboa to Mexico.....	10	42,448	48,996	68,271	42,135	35,277.12	.....
Totals.....	12	50,550	58,688	81,860	50,527	45,404.62	16,600
West Indies to west coast of South America.....	2	3,147	2,921	1,185	604	3,200.40	2,500
West coast of South America to West Indies.....	3	9,522	10,391	12,908	9,264	11,869.20	17,656
Totals.....	5	12,669	13,312	14,093	9,868	15,069.60	20,156
West Indies to United States.	6	14,045	18,088	22,350	13,624	14,657.05	3,466
West coast of South America to Azores.....	10	30,832	36,125	44,999	29,592	38,139.55	60,291
Miscellaneous (Atlantic to Pacific).....	141	341,354	392,445	506,428	334,860	442,040.65	401,204
Miscellaneous (Pacific to At- lantic).....	85	211,103	245,951	314,335	205,073	253,718.66	211,446
Totals.....	226	552,457	638,396	820,763	539,933	695,759.31	612,650
Grand totals.....	2,783	9,303,687	11,435,811	14,451,830	9,225,519	11,261,098.50	10,707,005


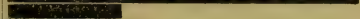
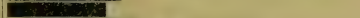
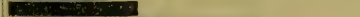










SHIFTING TRADE ROUTES.

While the totals of cargo for the 2 years are approximately the same, there have been extensive changes in the volume moving over the various trade routes served by the Canal, as the accompanying graphs will indicate.

CARGO FROM ATLANTIC TO PACIFIC—CALENDAR YEAR 1920.

	Tons.	
United States to Far East.....	1,405,417	
United States to South America.....	893,393	
Mexico to South America.....	659,777	
United States to Australasia.....	532,297	
United States coastwise.....	516,632	
Europe to Australasia.....	310,876	
Europe to South America.....	259,921	
Mexico to United States.....	129,510	
Cristobal to South America.....	114,445	
Europe to United States.....	110,401	
United States to Canada.....	92,371	
Cristobal to United States.....	38,680	
Cristobal to Central America.....	15,102	
Miscellaneous.....	190,528	
Total.....	5,269,350	

CARGO FROM ATLANTIC TO PACIFIC—CALENDAR YEAR 1921.

	Tons.	
United States to Far East.....	1,271,575	
United States to South America.....	417,818	
Mexico to South America.....	348,626	
United States to Australasia.....	446,101	
United States coastwise.....	893,396	
Europe to Australasia.....	346,600	
Europe to South America.....	247,320	
Mexico to United States.....	230,259	
Cristobal to South America.....	39,497	
Europe to United States.....	155,859	
United States to Canada.....	34,148	
Cristobal to United States.....	26,245	
Cristobal to Central America.....	14,290	
Miscellaneous.....	593,941	
Total.....	5,065,675	

Taking first the cargo moving from Atlantic to Pacific, the most important trade is still that from the United States to the Far East, but the cargo tonnage moving over this route declined approximately 9 per cent.

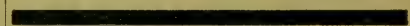












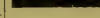
Cargo from the east coast of the United States to the west coast of South America declined more than 52 per cent. The greatest tonnage loss here was in coal shipments from Chesapeake Bay.

Cargo from the east coast of Mexico to the west coast of South America (crude oil) declined 47 per cent, and cargo from the east coast of the United States to Australasia declined 16 per cent.




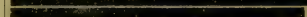








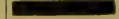
On the other hand, there was a notable increase in the United States coastwise trade, amounting to no less than 73 per cent.

The foregoing are the important trades. Of the minor trades, the following show decreases: Europe to west coast of South America, Cristobal to west coast of South America, east coast of the United States to the west coast of Canada, and Cristobal to the west coast of the United States. The following of the lesser trades show increases: Europe to Australasia, Mexico to the west coast of the United States (crude oil), Europe to the west coast of the United States, and the miscellaneous routes.

CARGO FROM PACIFIC TO ATLANTIC—CALENDAR YEAR 1920.

	Tons.	
South America to United States.....	1,447,849	
South America to Europe.....	1,062,702	
United States to Europe.....	749,447	
United States coastwise.....	669,095	
Far East to United States.....	549,990	
Australasia to Europe.....	459,527	
South America to Cristobal.....	251,451	
Australasia to United States.....	156,015	
Canada to Europe.....	129,909	
United States to Africa.....	60,476	
United States to Cristobal.....	48,542	
South America to West Indies.....	21,435	
Central America to Cristobal.....	16,054	
Miscellaneous.....	346,277	
Total.....	5,966,769	

CARGO FROM PACIFIC TO ATLANTIC—CALENDAR YEAR 1921.

	Tons.	
South America to United States.....	622,789	
South America to Europe.....	857,107	
United States to Europe.....	1,501,859	
United States coastwise.....	1,050,722	
Far East to United States.....	267,106	
Australasia to Europe.....	540,633	
South America to Cristobal.....	90,183	
Australasia to United States.....	55,835	
Canada to Europe.....	252,684	
United States to Africa.....		
United States to Cristobal.....	15,432	
South America to West Indies.....	17,656	
Central America to Cristobal.....	14,815	
Miscellaneous.....	354,509	
Total.....	5,641,330	

Taking the cargo moving from Pacific to Atlantic, the trade from the west coast of South America to the east coast of the United States shows a shrinkage of 57 per cent, and the trade from the west coast of South America to Europe a shrinkage of 19 per cent. This has been due in the main to the decline of the Chilean nitrate business.

The trade from the Far East to the east coast of the United States has fallen off 51 per cent. But to compensate for this there has been an increase of more than 100 per cent in the cargo moving from the

west coast of the United States to Europe, and an increase of 57 per cent in the eastbound United States coastwise trade.

Minor trades which have declined are: South America to Cristobal, Australasia to the United States, the west coast of the United States to Cristobal, South America to the West Indies, and Central America to Cristobal. There has been an increase in the trades from Australasia to Europe, the west coast of Canada to Europe, and the miscellaneous trade routes.

On the whole, the area which appears to have benefited most by the operation of the Canal during the past years has been the west coast of North America, including Canada and the United States.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended February 6:

Motor ship *Pedro Christopherson*, repair oil pump, starboard side; remove crank shaft of port auxiliary compressor engine; straighten and remachine bearing controls; remetal bearings and bed-down shaft; manufacture and install bushing for No. 1 cylinder and straighten connecting rod; manufacture and install new piston; repair jacking gear; manufacture 4 valve stems and seats, and eccentric strap to oil pump.

PREVIOUSLY REPORTED.

Barges *No. 132*, dock and undock; scale and paint bottom, and necessary repairs below water line, on hull; *No. 134*, dock and undock; scale and paint bottom, and necessary repairs below water line, on hull; motor ship *James Timpson*, dock and undock; clean and paint bottom; renew damaged section of keel and miscellaneous repairs in engineer's department; tug *Mariner*, dock and undock; scale and paint bottom, and convert from coal burner to oil burner as per specifications.

The following vessels were at the Cristobal shops for repairs during the week ended February 6:

Steamships *Cauca*, dock, clean and paint hull; renew 1 plate in hull; repair refrigerator; examine rudder and all sea valves, etc.; *Tamar*, manufacture feed pump ram; manufacture funnel for galley; electric weld and repair boilers; repair winch pipe; repair steering rod coupling, etc.; tug *Porto Bello*, dock, scrape, and paint hull; electric weld boiler; renew fender guards and railing where directed; overhaul air pump and all sea valves; repair piping, etc.; steamships *General O. H. Ernst*, retube ammonia condenser; repair anchor windlass; plug holes in forepeak tank; *Panama*, straighten 3 deck stanchions; overhaul screws on boat davits; install new tripper on port anchor; manufacture 2 water column valves for main boiler, etc.; *Solana*, repair anchor windlass and boilers; examine cylinders; furnish 50 laborers to clean and paint hull and holds, also clean in engine and fire room; repair galley range and renew brickwork; repair miscellaneous piping, etc.; *Caribbean*, open up all cylinders, valves, etc., in main engines, auxiliaries, and deck hoisters; remove packing from above and coat for laying up of ship; clean boilers and coat with fish oil, etc.; *Balboa*, repair friction band on hoister and clean boilers; *General W. C. Gorgas*, weld back connection of boilers; roll tubes; repair scupper pipe, etc.; *Jamaica*, *Fairfield City*, *Tolosa*, *Zacapa*, and schooner *Linda S.*, minor repairs.

Executive Order.—Rules of Practice and Procedure of the United States District Court in and for the Canal Zone.¹

By virtue of the authority vested in me by Act of August 24, 1912, c. 390, sec. 8, it is

ORDERED, That the within Rules of Court² shall be in force in the United States District Court, in and for the Canal Zone, on and after this date.

All previous orders in conflict with this order are hereby repealed.

WARREN G. HARDING.

THE WHITE HOUSE,
December 30, 1921.

¹ Published as Panama Canal circular No. 601-128.

² NOTE: The Rules of Court referred to in the above Executive Order are being printed in the form of a pamphlet entitled "Rules of Practice and Procedure of the United States District Court in and for the Canal Zone."

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, February 4, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Entered Canal.				Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Arrived at port.	Day.	Hour.	Completed transit.	Day.	Hour.						Nature.	Tons.	Gross.	Net.
Kentuckian	29	2	00	29	13	35	29	14	45	American.	American-Hawaiian Line.	General.	3,000	7,040	4,941
Noorddijk	29	6	24	30	6	15	30	14	30	Dutch.	Holland-American Line.	General.	3,380	8,888	6,612
Port Nicholson	29	23	11	30	7	22	30	16	19	British.	Commonwealth and Dom. Line.	General.	1,709	10,821	8,048
Chickasaw City	29	22	46	30	10	30	17	44	30	American.	United States Steel Products Co.	General.	8,310	6,841	4,686
Robin Good-fellow	30	12	35	30	13	12	30	21	02	American.	Robin Line Steamship Co.	General.	5,624	6,939	5,624
Cayuco 2072	30	24	30	30	15	35	30	22	32	Panaman.	E. Sardi.	General.	1,572	4,742	3,093
Quilque	29	23	29	31	6	20	31	14	17	British.	Pacific Steam Navigation Co.	General and coal.	4,800	5,148	3,523
Alvarado	29	6	30	31	6	23	31	15	43	British.	Pacific Steam Navigation Co.	Bullast.	2,844	7,748	
Cape Henry.	30	14	50	31	7	22	31	15	21	American.	Atl. Gulf & Pacific S. S. Co.	General.	5,000	11,487	8,732
Lewis Luckenbach	30	18	23	31	8	05	31	16	30	American.	Luckenbach Line.	General.	5,700	4,062	3,397
Irish Monarch.	30	15	28	31	9	05	31	17	31	American.	Raeburn & Verel, Ltd.	Sugar.	8,000	8,791	5,794
Narenta	30	17	11	31	10	30	31	18	26	British.	Royal Mail Steam Packet Co.	Bullast.	5,061	7,187	5,060
Laureleaf	30	22	00	31	10	30	31	19	38	British.	Anglo-Saxon Petroleum Co.	Fuel oil.	5,465	7,087	5,464
Jamaica	31	4	54	1	6	14	1	13	27	British.	Pacific Steam Navigation Co.	General.	6,700	5,292	4,454
A. L. Kent	31	20	19	1	7	50	1	16	21	American.	Crowell & Thurlow.	General.	9,310	8,120	5,808
Corning	1	8	42	1	9	05	1	17	10	American.	Standard Oil Co.	Crude oil.	1,341	6,161	4,300
Trevorian	1	10	07	1	10	20	1	18	30	British.	Han Steamship Co.	General.	1,385	5,371	3,969
Knight Templar	1	7	00	1	12	00	1	19	36	British.	Blue Funnel Line.	General.	4,120	7,893	5,647
Rio Gatun	30			1	9	37				American.	A. R. Eckhardt.	General.	1,587	2,036	1,587
Col. Geo. F. E. Harrison	11-7	12	45	2	15	57	2	15	57	American.	United States Army.	General.	657	1,694	871
Blue Triangle	2	8	00	2	16	09	2	17	25	American.	N. Atl. & Western S.S. Co. (S.B.)	General.	7,867	4,899	
Frances	2	19	52	3	17	00	3	17	00	American.	S. M. Perkins.	General.	132	72	
Valparaiso	2	17	17	3	17	00	3	17	00	American.	Johnson Steamship Line.	General.	6,682	6,043	4,509
Alcorn	27	17	17	3	17	00	3	17	00	Swedish.	United States Navy.	General.	3,054	737	
Deerfield	3	4	42	3	18	10	3	18	10	American.	Elder Steel Steamship Co.	General.			
Kiyo Maru	3	5	50	3	18	10	3	18	10	American.	Toyo Kisen Kaisha.	Fuel oil.			
Griffin	3	12	34	3	20	20	3	21	28	Norwegian.	Thor Thoresen.	Coal and general.			
Barma	1-21	16	04	3	20	10	3	22	07	British.	Pacific Steam Navigation Co.	General.			
America	3	22	40	4	6	38	4	15	10	Panaman.	J. H. Sibley.	Bullast.			
Cubore	3	23	10	4	6	15	4	15	35	American.	Guaranty Trust Co.	General.			
Laura C. Hall	3	18	42	4	7	35	4	15	36	British.	Pacific Metals Corporation.	Buenaventura.			
Nazato Maru	3	23	24	4	7	35	4	15	36	Japanese.	Nippon Yusen Kaisha.	Yokohama.			
Nitro	3	7	55	4	8	50	4	16	40	American.	United States Navy.	Gen. ammunition.			
Balboa	31	14	11	4	10	00	4	17	34	American.	Colombian Maritime Co.	Bullast.			

* Ammunition ship.

* Motor schooner.

* Tug.

* Motor ship.

* Mine planter.

* Launch.

THROUGH THE CANAL—PANAMA TO ATLANTIC.

Ship	29	14	25	30	6	51	30	14	50	31	7	35	United States Steel Products Co.	424.2	56	2	25	8	San Diego.	United King	Lumber, general	7,330	7,539	5,495
Lehigh	29	16	35	30	7	41	30	15	23	30	15	23	N. Atl. & West. S. S. Co. (S. B.)	390.0	54	2	18	0	Seattle.	Portland, Me.	Shingles, general	512	6,105	4,346
Oriana	30	0	30	30	8	58	30	16	55	30	20	30	Pacific Steam Navigation Co.	465.1	56	0	23	6	Coronel.	Liverpool	(*)	3,948	8,620	5,345
Balboa	30	16	25	31	6	40	31	14	11	4	10	00	Colombian Maritime Co.	190.0	29	1	14	3	Buenaventura.	Cristobal	Coffee, hides	399	937	335
Florence Luckenbach	31	6	00	31	7	47	31	14	50	31	14	50	Luckenbach Line.	401.8	52	2	15	3	Seattle.	Mobile	General	1,300	6,002	4,621
Gen. W. M. Graham	31	8	05	31	9	04	31	17	35	31	22	05	Wessel Duval & Co. (S. B.)	380.2	53	1	23	8	Valparaiso.	Charleston	(*)	6,734	5,667	4,220
Toluha	9-15	05	31	9	13	1	16	35	31	17	05	16	United States Army	156.0	32	0			Balboa	Cristobal	Copper ore.	9,320	7,176	5,221
West Catapane	1	0	20	1	13	12	1	20	19	2	23	47	W. Wilhelmssen.	417.0	54	2	28	0	Puntarenas.	New York		6,625	6,567	4,917
Stanley Dollar	1	12	30	1	13	12	1	20	19	2	23	47	Elder Steel Steamship Co.	410.5	54	3	24	0	Puget Sound.	New York	Lumber	8,160	3,460	2,404
Hawkeye State	1	10	10	2	6	55	2	14	40	2	18	45	Dollar Line	288.8	44	6	21	0	Vancouver.	Baltimore	General	397	15,234	10,471
Laureleaf	31	19	38	2	8	09	2	15	53	2	16	46	Mason Navigation Co. (S. B.)	517.0	72	2	27	6	Honolulu.	(*)	Ballast	5,791	3,714	
Limosa	2	9	20	3	10	19	2	17	25	3	17	25	Anglo-Saxon Petroleum Co.	370.1	51	4	23	0	Balboa	Tampico	Lubricating oil	7,272	6,090	4,324
Laurel Branch	2	9	20	3	10	51	2	15	50	3	5	15	Anglo-Saxon Petroleum Co.	412.4	53	4	24	0	San Francisco	United King	General	5,200	4,182	3,034
La Paz	2	16	30	3	8	46	3	15	50	3	18	50	F. and W. Ritson.	360.0	46	0	23	5	Puntarenas.	England	General	8,160	7,216	4,912
West Harrod	2	20	00	3	8	03	3	16	50	3	17	25	Pacific Steam Navigation Co.	406.3	54	2	26	8	Talcahuano	Havre	General	4,455	6,476	4,677
Laure C. Hall	3	2	17	3	8	30	3	16	50	4	5	25	Barber Lines (S. B.)	410.0	54	4	18	6	Hongkong	New York	(*)	38	132	72
Cauca	2	14	00	3	9	22	3	18	10	4	6	15	Pacific Metals Corporation	81.0	25	5	9	6	Buenaventura	Cristobal	Coffee	7	2,757	1,810
Henry D. Whiting	3	9	15	3	11	20	3	18	17				Pacific Steel Navigation Co.	246.0	35	2	13	0	Valparaiso.	Cristobal	Wine			
Corning	3	11	45	3	12	28	3	19	15	4	5	10	Union Sulphur Co.	356.0	51	4	14	0	Los Angeles.	Sabine, Tex.	Ballast			
Mississippi	3	17	10	3	13	32	3	20	54	3	20	54	Standard Oil Co.	385.7	52	4	17	8	Balboa	Tampico	Ballast	6,800	6,942	5,001
Saturn	3	15	50	4	9	48	4	14	52	4	17	30	French Line.	420.0	52	4	26	0	Vancouver.	Bordeaux	(*)	350		
Imperial	4	1	20	4	7	23	4	16	15				United States Navy	283.0	40	5	18	0	Mare Island	Philadelphia	Navy stores	278	3,296	2,156
													South American Steamship Co.	336.8	41	2	22	6	Talcahuano	Cristobal	General			

7 Transport. * Cotton, sugar, and metals. * Nitrate of soda and general. ** Copra, hemp, and cases of pineapples. ** Grain, canned goods, dried fruits, and lambers.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Jan. 29	Abangarez.	United Fruit Co.	New Orleans via Habana.	Jan. 29	Meganite	White Star Line	La Guaira.
Jan. 29	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.	Jan. 29	Oranje Nassau	Royal Netherlands W. I. Mail	Port Limon.
Jan. 29	Oranje Nassau.	Royal Netherlands W. I. Mail	Cartagena via wayports.	Jan. 30	Abangarez	United Fruit Co.	Bocas del Toro.
Jan. 30	Caribbean.	Panama Railroad Steamship Line	Panama.	Jan. 30	Patulent	United States Navy	High seas.
Jan. 30	Parismina.	United Fruit Co.	New Orleans.	Jan. 31	Columbia	N. O. & S. S. S. Line	New Orleans via wayports.
Jan. 31	Columbia.	N. O. & S. S. S. Line.	New Orleans.	Feb. 1	Parismina.	United Fruit Co.	New Orleans via wayports.
Jan. 31	La Navarre	French Line	Havre via wayports.	Feb. 1	Empress of Britain.	Canadian Pacific Railroad Co	La Guaira.
Feb. 1	Empress of Britain.	New York via wayports.	Boston via wayports.	Feb. 2	Clyde Line.	Clyde Line	Santiago, Cuba.
Feb. 1	San Gil.	United Fruit Co.	Colon.	Feb. 2	San Gil	United Fruit Co.	Port Limon.
Feb. 1	Linda S.	Surgeon Brothers.	United Kingdom via wayports.	Feb. 2	Abangarez	Harrison Line	New Orleans.
Feb. 1	Tamar	Royal Mail Steam Packet Co.	Curacao.	Feb. 2	Gladiator	Anglo-Saxon Petroleum Co.	Puerto Cortez.
Feb. 1	Trophon.	Anglo-Saxon Petroleum Co.		Feb. 3	Trophon.	French Line.	Puerto Colombia.

(Continued on page 344, column 2.)

Typewriters For Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, model 4. Price range from \$20 to \$30. Inspection can be made by applying to Storekeeper, S. D., administration Building, Balboa Heights.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Current Net Prices on Coal, Fuel Oil, and Diesel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or less than 50 tons, the price is \$15 per ton at Cristobal, \$18 at Balboa.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Invitation for Proposals to Furnish Native Logs to The Panama Canal.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., until 10.30 a. m. Wednesday, February 15, 1922, and then opened, for furnishing The Panama Canal 300,000 feet B. M., more or less, native logs, during a period of one year from date of contract, in accordance with form of agreement, copies of which may be had upon application to the office of the Chief Quartermaster.

Bids must be inclosed in sealed envelope, addressed to The Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., and marked "Proposal for furnishing native logs, to be opened February 15, 1922."

The Panama Canal reserves the right to reject any or all bids.

The successful bidder will be given the first option to purchase, if desired, the launch *Mecca*, and other logging equipment formerly used by The Panama Canal, at reasonable appraised prices. This launch was built for logging purposes and is particularly suitable for same. Launch may be inspected at Monte Lirio.

Certificate.

By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 343.

PORT OF CRISTOBAL—continued.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
Feb. 1.	Gladator.	Harrison Steamship Line.	Feb. 3.	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.
Feb. 2.	Abangarea.	United Fruit Co.	Feb. 4.	Tolosa.	United Fruit Co.
Feb. 3.	Tolosa.	United Fruit Co.	Feb. 4.	Camito.	Elders & Fyffes, Ltd.
Feb. 4.	Solana.	Pacific Mail Steamship Co.	Feb. 4.	Oranje Nassau.	Royal Netherlands W. I. Mail
Feb. 4.	Panama.	Panama Railroad Steamship Line.			
Feb. 4.	Oranje Nassau.	Royal Netherlands W. I. Mail			
Feb. 4.	Camito.	Elders & Fyffes, Ltd.			
PORT OF BALBOA.			PORT OF BALBOA.		
Jan. 29.	Galveston ¹³ .	United States Navy.	Jan. 31.	Galveston ¹³ .	United States Navy.
Jan. 30.	Hwah Ping.	Chinese Government.	Jan. 31.	Hwah Ping.	Chinese Government.
Jan. 30.	Romulus.	A. O. Lindvig.	Feb. 1.	Romulus.	A. O. Lindvig.
Feb. 1.	Leland "P" ¹⁴ .	C. Oswald & Co.			
Jan. 29.	Corinto.				
Jan. 30.	Hongkong.				
Jan. 30.	Talara.				
Feb. 1.	San Francisco.				

¹³ Motor boat.¹⁴ Cruiser.

* Other than ships passing through the Canal.

MAR 14 1922

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address

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The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office

at Cristobal, C. Z., under the Act of March 3, 1879.



Volume XV. Balboa Heights, C. Z., February 15, 1922. No. 27.

Commodity Statistics.

The following were the most important items of cargo moving from Atlantic to Pacific in 1921:

	Tons.
Crude oil.....	900,410
Manufactures of iron and steel.....	697,210
Coal.....	539,351
Refined oil.....	461,085
Cotton.....	196,329
Sulphur.....	108,415

As compared with the figures for 1920, which were not, however, so minutely and accurately compiled, there has been an increase in the shipments of crude and refined oil and of manufactures of iron and steel, while coal shipments have fallen off. Approximately 25 per cent of the coal shipped in 1921 was British, whereas in the previous year, although no accurate figures are available, it is probable that practically all the coal moving south through the Canal was American. It is impossible to make an accurate comparison in the case of cotton and sulphur.

Other commodities which in 1921 contributed more than 20,000 although less than 100,000 tons each to the traffic from Atlantic to Pacific were: Sugar, railroad materials, machinery, iron, ammonia, and tobacco.

PACIFIC TO ATLANTIC.

The principal commodities moving from Pacific to Atlantic were:

	Tons.
Nitrate.....	991,767
Wheat.....	914,877
Lumber.....	448,087
Barley.....	435,481
Sugar.....	270,952
Flour.....	177,977
Refined oil.....	147,573
Canned fruit.....	143,188
Copper.....	135,073
Refrigerated mutton.....	128,515
Canned fish.....	107,188
Wool.....	107,075

A comparison with the previous year is possible only in the case of a few of these items. Nitrate shipments in 1920 totaled 1,995,906 tons; flour, 487,614; wheat, 318,944; lumber, 205,172; and sugar, 127,995.

Other commodities which contributed in 1921 less than 100,000 but more than 20,000 tons each to the traffic from Pacific to Atlantic were: Coffee, phosphates, rice, refrigerated beef, copper ore, cotton, refrigerated cheese, dried fruit, cacao, copra, oats, crude oil, cotton seed, lubricating oil, refrigerated butter, skins and hides, cottonseed oil cake, coconut oil, and ivory nuts.

Details of the origin and distribution of commodities, by trade areas, are presented in the following tables:

Classification of Cargo Passing Through the Panama Canal, Showing Origin and Destination of Same, Calendar Year 1921.
COMMODITY STATISTICS.
 ATLANTIC TO PACIFIC.

(Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—									
	West Indies.	East coast of South America.	East coast of Canada.	East coast of Mexico.	Cristobal, C. Z.	Other European.	British Isles.	East coast of United States.	West coast of South America.	West coast of United States.	Far East.	Australasia.	West coast of Canada.	West coast of Central America.	Balboa, C. Z.	Miscellaneous.
Total.	12,750					26	513	11,960	3,269	1,960	1,333	6,115	61	12		
Agricultural implements						53		593		583	53	10				
Alcohol	3,292						2,500	47,390	2,500	722						
Ammonia	49,684									2,926	42,816	2,387				
Asbestos	144						10					144				
Asphalt	3,051		134				20	3,030	422		2,355	274				
Automobiles	6,893		449			37	1,204	4,703	609	804	1,607	3,830	7	36		
Auto accessories	644					5		309	21	278	15					
Aerated waters	182		330					175	14	168						
Aeroplanes	100							100		100						
Balsam	3							3			3					
Bark, ground	15							15								
Beeswax	300							300			300					
Blood and tankage	2,955	2,955								2,863	92	40				
Borax	62						40	18	4		18					
Bricks, fire	1,327					708	459	160	1,037	290						
Beans	30							30		30						
Bitumen	70							70				70				
Bone meal	150						150			150						
Canned goods:																
Fish	3,282		2			6	580	132	271	2,823		129	2	57		
Fruit	1,753					70	54	234	153	1,379		221				
Meat	1,187	13				32	315	1,395	100	1,033	13	40		1		
Milk	1,089					5	240	1,586	273	15	801	30	272	25		
Vegetables	7,268		250			203	268	111	6,436	371						
Other	3,675							3,389	378	3,189	100		8			
Calcium	1,958		1,630				286	186		228		1,630				
Canary seed	424	424				42				424						
Carbon	401							401			401					
Caulstic soda	605					2	420	183	81	394	130					
Cement	62,782					439	13,890	19,275	49,985	2,390	1,621	5,927	67	1,343	1,449	
Cereals	181							181	30	106	45					
Chalk	3,588					3,414	174		7	3,581						
Chemicals	7,724		1			1,807	1,733	3,889	2,332	3,035	1,181	1,002	30	93		
China clay	1,162					234	1,162			1,162						1

[illegible]

COMMODITY STATISTICS.—ATLANTIC TO PACIFIC—Continued.
(Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—									
	West Indies.	East coast of South America.	East coast of Canada.	Mexico.	Cristobal, C. Z.	Other European.	British Isles.	East coast of United States.	West coast of South America.	West coast of United States.	Far East.	Australasia.	West coast of Canada.	Central America.	Balboa, C. Z.	Miscellaneous.
Total.																
Manufactured goods:																
Iron and steel	13		3,367		3,481	23,809	32,981	633,572	83,360	276,138	261,299	60,395	3,286	3,551	305	8,876
Machineery					811	4,370	11,349	67,211	21,772	11,211	33,439	16,165	350	713	7	100
Railroad material					863	5,155	9,632	70,037	11,759	8,764	52,727	11,362	170	305		100
Textiles					1,731	2,239	5,088	10,691	8,137	5,419	1,631	2,866	94	375		1,239
Other		2			1,212	1,735	11,072	52,474	8,928	38,494	9,760	7,716	834	794		
Marble		13	20			1,191		32	1,161	50	12	20				
Matches						40	20	12	11							
Metals:																
Aluminum																
Copper					1		184	336	31	547	11,319	154				2
Iron					53	28,518	3,301	12,068	1,875	24,454	16,294	7,095	1,566	53		
Lead			670			20	152	250	20	56	194	151	1			
Nickel					3		10	215	13		215					
Silver								66		66						
Tin					37	9	504	26,710	609	12,752	11,362	587	50	37		11,863
Zinc						475	2	623	161	475	1,636		2			
Other						148	33	2,472	100	856						
Milk, powdered						8		100	8	486		2				
Musical instruments.								497	117	296	51					9
Malt							66	64	1	1,100						
Nuts								51								
Nitrate						1,101										
Oils:																
Cruise	7,943				103	110	35	125,463	350,817	222,903	107,870	9,034	73,136	9,405	118,474	8,771
Cocunut							2					2				
Cottonseed								813	125	688						
Linseed					3	1,724	3,320	1,261	5	5,916	50	277	60			
Olive						779		212	447	510			34			
Pine								338		338						
Refined						315	952	455,580	10,626	45,129	264,989	139,789	18	534		
Vegetable.				4,151	87	246	1,740	850	836	1,146	264,989	139,789	375			
Ore:					52											
Copper							30	451		101	350	30				
Cyanide.										500						
Iron					43	120	480	2,134	70	2,227		480				
Manganese						5	397	218		397	218		5			
Lead.								20	20							

98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	
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COMMODITY STATISTICS.—PACIFIC TO ATLANTIC.
(Figures represent tons of 2,240 pounds.)

Commodity.	From—										To—				
	Miscellaneous.	Hawaiian Islands.	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other European.	Cristobal, C. Z.	East coast of Canada.	West Indies.	Miscellaneous.
Total.	306			26				150	148	248					
Agricultural implements	22				22			220							
Alcives	242		7				235		235			7			
Alcohol	132						132		132						
Alpaca	225						225		85	40					100
Asphalt	170		5		31	19	53	71	109	48		1			
Automobiles	270						279		276		21				
Auto accessories	248							248		248					
Algarobilla	154					154			154						
Alumen	154														
Balsam	30		37				2				5				
Balsa wood	571		2					569	419			2			150
Bark															
Cacate-cascarilla.	245			10	14		199	22	135	70	18	22			
Cactonia	33				4		2	27	11			2			
Peruvian	104							164	1	62	43	88			
Quilay	981							981	20	190	767	4			
Bark	435,481				48		392,112	43,321	1,075	284,820	149,512	20		54	
Beans	68,170				3,801	12,094	34,807	17,477	28,251	5,991	25,189	108		8,640	
Beswax	1,422						850	572	892	526		4			
Bonath	2						2	2		2					
Borax	20,321						5,294	15,027	5,001	8,504	6,816				
Borax	1,488							1,488		812	676				
Bristles	383					334	49		378	5					
Bristal wood	33			30		33			33						
Bricks	30												30		
Bark															
Condurango	2							2				2			
Other	7				7										
Bamboo	14						14		14						
Cacao	37,269		35		47		1,556	35,631	14,113	611	3,954	18,453			138
Camphor	838					838			838						
Canned goods:															
Fish	107,188			16,580		10,899	79,709		50,235	37,308	19,331			239	75
Fruit	143,188			1,249	340	177	121,742	130	81,311	44,118	17,444	8		107	200
Meats	3,493						1,438	116	1,113	2,030	339	9		2	
Milk	7,037					42	6,281		3,580	3,132	325				
Vegetables	5,917			156	600	5	5,908	4	5,027	17	49	5		219	
Other.	6,828			2	42		6,778	6	6,491	106	223	8			

[illegible]

Milk, dried.									
Metal, fungsten.	3,065	2,860	225	2,860	225	2,860	225	2,860	
Musical instruments	48		48		48		48		
Nitrate	991,767		69	991,698	403,479	96,805	376,329		6,553
Nuts.	221		221		221		221		
Oats.	32,913	930	254	23,010	50	25,745	7,118		
Oils:									
Benzine	2,400	2,400			2,400				
Crude.	32,582		1,779		34	30,769	84	4,723	
Refined.	147,573				123,423	24,150	80,185	823	16,558
Coconut	23,234	2,554	19,532		535		41,560	275	
Eucalyptus	19								
Lubricating	28,257				28,257		10,144		
Rapeseed	357		357				357		
Vegetable	6,853		5,902		200	189	5,343	3	
Wood.	1,648		1,648				1,642	6	
Onions	6,674				6,674		6,180		494
Onyx	31							31	
Orchilla	110				2	108	22	71	
Ores:									
Antimony	1,753		1,733			20	1,753		
Arsenic	48		48				48		
Copper	46,903				3,546	43,357	43,269	126	
Chrom.	17,444	17,444					5,120	872	30
Gold and silver	2,648					2,648	1,729	329	
Hematite	8,000					8,000	8,000	196	
Iron.	5,040	5,040					5,000	40	
Lead.	69					69	69		
Magnetite.	415				415		415		
Manganese	4,623		3,830		205		4,623		
Platinum.	3					3		3	
Tin.	18,551		15		808	17,728	6,822	49	
Tungsten	125		125				125		
Vanadium.	3,261					3,261	3,225	36	
Zinc	2,295	200				2,095	200	2,095	
Other	651	20	25			606	390	4	10
Oil:									120
Cottonseed	480					480			
Naphtha	4,820	4,820					4,820		
Other	510	11	432		67		510		
Paints.	98				98		2		
Paper.	1,142	53	56		999	34	1,105	34	
Peanuts	2,192	2	2,059		131		2,192		
Pepper	400				400		400		
Phosphates	51,167		7,300						
Porcelain	845				20		842	37,007	
Pulp, paper	6,495		800		700		6,495	3	
Quicksilver	107	4,995			107				
Quinine	18					18		18	
Rice	51,753	100	20,794		29,510	1,349	13,338	1,238	50
Rubber	11,774	14	11,356		215	82	11,597	5	
Wye	1,309	5			1,000	309		1,109	

COMMODITY STATISTICS.—PACIFIC TO ATLANTIC—Continued.

(Figures represent tons of 2,240 pounds.)

Commodity.	From—						To—								
	Miscellaneous.	Hawaiian Islands.	West coast of Central America.	West coast of Canada.	Australasia.	Far East.	West coast of United States.	West coast of South America.	East coast of United States.	British Isles.	Other European.	Cristobal, C. Z.	East coast of Canada.	West Indies.	Miscellaneous.
Total.	158						158			158					
Rags	20				20		129			129					
Sand	409						409				409				
Salt															
Salt-peter															
Seeds.															
Clover	1,976				21	130	32	1,793		323	1,498				
Grass	100				100					63	100				
Hemp	970					527	106	443		375	261				
Mustard	375					269				100					
Sesame	1,011					1,011				276					
Other	371				61	140	170			52	19				
Shells	75				49	3	20			1,146	29				
Silk	1,378					1,337	12	29			3				
Slate, pencil	16						16			12,287	8,851				
Skins and hides	25,602				555	3,630	4,173	8,382		27	2,310		62		50
Soap	39					78	37	2		87	30				
Spices	117				30	60,453	9	87,999		14		800			
Sugar	270,932						12			185,977	69,244				
Syrup	14					91				91					
Starch	91									399					
Talc	399						399			86					
Tapioca	86					86									
Tar	70										70				
Tea	11,977					11,794	93	70		11,339	38				
Tobacco	576				243	277	50	5		527	1				
Tomato puree	855						855			855					
Vegetables	564						525	39		385				140	
Walnuts	2,641					55	1,088	1,451		2,491					
Wax	302				47		160	120		285	14				
Wheat	914,877				38,852	4,890	853,884	13,751		50	534,974				21,379
Wool	107,075				66,488	7,207	24,288	9,038		41,753	63,393		390		
Yerba Santa	25						25			25					
Totals.	5,641,330	11,736	142,259	46,958	112,832	604,741	291,004	2,715,570	1,716,230	2,024,047	1,791,915	130,773	22,314	48,682	161,970

¹ This cargo was routed as follows: East coast of South America, 10,628; Egypt, 9,091; east coast of Mexico, 12,271; Azores for orders, 87,524; West Indies for orders, 32,056; northern Africa, 9,500; total, 161,970.

Supplement No. 10 to Tariff No. 5.—Coal.—Superseding Supplement No. 7 to Tariff No. 5.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., February 1, 1922.

ITEM 21.—COAL.

(Effective February 1, 1922.)

The provisions of Supplement No. 7 to Tariff No. 5 are hereby superseded by the following:

8. Special prices for coal in large quantities as specified below, taken from Cristobal-Colon.
- (a) To vessels taking 1,200 tons or over;
 - (b) To vessels taking between 825 and 1,200 tons and bunkering full;
 - (c) To vessels taking 825 or more tons and more than quantity required to bunker full;
Price to the above 3 classes, per ton of 2,240 pounds. . . \$10.00
 - (d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at \$10 per ton of 2,240 pounds.
 - (e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at \$10 per ton.
 - (f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds. 1.00
 - (g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 4 to Tariff No. 5 will apply.

M. L. WALKER,

Acting Governor, The Panama Canal.

Second Vice President, Panama Railroad Company.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending February 4, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Oranje Nassau	Royal Netherlands W. I. Mail	January 29	January 29	47	(²)
Abangarez	United Fruit Co.	January 29	January 30	1	31½
Noorderdyk	Holland-American Line	January 29	January 30	108	108
Quilpue	Pacific Steam Navigation Co.	January 29	January 31	97	(²)
Gen. W. C. Gorgas	Panama Railroad Steamship Line	January 29	February 3	1,958	2,367
Caribbean	Panama Railroad Steamship Line	January 30	January 30	340	
Parismina	United Fruit Co.	January 30	February 1	883	4
Columbia	N. O. & S. A. Steamship Line	January 31	January 31	311	81
La Navarre	French Line	January 31	February 3	63	184
Balboa	Colombia Maritime Co.	January 31	February 4	399	(²)
Jamaica	Pacific Steam Navigation Co.	January 31	February 4	1	116
Tamar	Pacific Steam Navigation Co.	February 1	February 4	112	
Trophon	Anglo-Saxon Petroleum Co.	February 1	February 3	4,889	(²)
San Gil	United Fruit Co.	February 1	February 2	48	95
Gladiator	Harrison Line	February 1	February 2	484	(²)
Abangarez	United Fruit Co.	February 2	February 2	5	1
Barina	Pacific Steam Navigation Co.	February 3	February 3		668
Granfos	Caribbean Steamship Co.	February 3	February 3	35½	(²)
Tolosa	United Fruit Co.	February 3	February 4	357	19
Laura C. Hall	Pacific Metals Corporation	February 3	February 4	39	(²)
Imperial	Chilean Line	February 4	February 4	313	
Panama	Panama Railroad Steamship Line	February 4	February 4	1,450	
Oranje Nassau	Royal Netherlands W. I. Mail	February 4	February 4	100	
Camito	Elders & Fyffes, Ltd.	February 4	February 4	10	6

* Packages.

* No cargo laded.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, February 11, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.	Panama Canal tonnage.						
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.									Tons.	Gross.	Net.				
Barru	4	6	42	5	6	35	5	14	35	5	15	44	American	United States Steel Products Co.	360.0	47.0	23.6	New York	Corral	General	4,997	4,605	3,047
Eldorado	4	14	25	5	6	38	5	15	33	5	16	30	American	Swayne & Hoyt	245.6	42.0	19.0	New Orleans	San Francisco	General	2,200	2,439	1,662
Harley	5	0	08	5	9	35	5	16	53	5	17	40	American	Admiral Line (S. B.)	440.0	56.0	27.10	Baltimore	Seattle	Tin plate, steel	9,716	8,301	6,019
Walter A. Luckenbach	5	12	12	5	12	35	5	19	13	5	20	07	American	Luckenbach Line	446.5	56.1	28.0	New York	Los Angeles	General	3,450	8,785	6,582
Pakoa	5	11	30	6	6	30	6	14	09	6	15	35	British	Shaw, Saville & Albion Co.	477.5	63.1	24.0	Southampton	Australia	General	1,003	10,995	8,173
Fairfield City	5	8	15	6	7	30	6	16	43	6	17	55	American	United States Steel Products Co.	424.2	56.2	26.0	New York	Yokohama.	(²)	7,720	7,539	5,448
Florida	5	18	22	6	8	41	6	17	43	6	18	40	American	American-Hawaiian Line	429.2	55.6	23.6	New York	Los Angeles	General	6,758	7,273	5,105
Maui Maru	6	6	38	6	9	10	6	19	00	6	20	00	Japanese	Taiho Kisen Kaisha	445.0	58.0	26.0	Newcastle	Vancouver	Ballast	8,299	5,979	
Memphis City	6	7	24	6	9	40	6	19	55	6	21	35	American	United States Steel Products Co.	424.0	56.0	26.6	Mobile	Yokohama.	Steel	7,949	7,539	5,448
Celebes Maru	6	6	19	6	10	40	6	21	12	6	23	30	Japanese	Ozaka Sosen Kaisha	385.0	51.0	24.3	New Orleans	Yokohama.	General	5,326	6,014	4,406
Yayo Maru	6	7	33	6	11	07	6	21	55	7	3	00	Japanese	Kokusa Kisen Kaisha	425.0	54.0	27.6	Galveston	Yokohama.	General	9,430	6,798	5,174
Hataraka	7	12	01	7	6	40	7	13	57	7	19	00	British	British-India Steam Nav. Co.	445.0	58.0	26.0	Cardiff	Auckland	Coal	6,239	7,700	5,451
Gen. O. H. Ernst	5	11	57	7	12	30	7	19	25	7	20	30	American	Panama Railroad Steamship Line	356.4	45.3	18.8	New York	Guayaquil	General	630	4,503	2,764
La Habra	7	20	54	8	6	50	8	15	50	8	17	15	Norwegian	W. Wilhelmsen	424.8	57.0	26.0	Tampico	Antofagasta	Fuel oil	9,200	7,053	5,051
Hamburg	8	6	19	8	7	42	8	16	31	8	17	25	German	Kosmos Line	449.0	58.0	26.0	Bremen	Guayaquil	General	2,300		
Nevelan	8	7	10	8	8	32	8	17	43	8	19	05	American	American-Hawaiian Line	368.0	55.0	24.0	Galveston	San Francisco	Sulphur	4,000	5,671	3,628
Port Bowen.	8	7	26	8	9	15	8	19	07	8	20	00	British	Commonwealth and Dom. Line.	480.0	62.0	24.0	London	Vancouver	General	1,900	10,745	7,849
Imperial	4	16	07	8	10	16	8	18	00	8	19	05	Chilean	South American Steamship Co.	336.8	41.2	24.5	Cristobal	Valparaiso	General	617	3,296	2,156
Salvador	6	17	12	8	10	20	8	19	04	8	21	55	British	Pacific Steam Navigation Co.	215.0	33.0	13.10	Cristobal	Guayaquil	General	359	1,213	682
Violetta	8	23	29	9	6	38	9	12	15	9	13	05	American	J. F. Crocker	400.0	53.0	26.0	Cristobal	Gatun Lake.	Ballast	1		
Koyo Maru	9	7	17	9	7	35	9	15	25	9	17	20	Japanese	Toyo Kisen Kaisha	390.0	53.0	22.6	New Orleans	Yokohama	General	6,747	6,233	4,398
Rotarian	9	11	22	9	11	40	9	19	05	10	0	08	American	Swayne & Hoyt (S. B.)	380.0	53.0	22.6	Buenos Aires	San Francisco	General	5,506	5,660	4,174
Liverpool Maru	9	16	56	10	6	20	10	13	50	10	16	05	British	Kokusa Kisen Kaisha	385.0	51.0	26.0	New Orleans	Yokohama.	General	6,522	6,235	4,400
Palm Branch.	9	7	45	10	6	30	10	13	50	10	16	05	British	F. and W. Ritson	360.0	45.0	18.0	Glasgow	Guayaquil	General	2,533	4,161	3,133
City of Canton.	9	16	56	10	7	30	10	13	05	10	16	05	British	Hall Line, Ltd.	450.7	56.9	24.8	New York	Sydney	General	6,300	8,127	6,134
Holmia	10	6	37	10	12	22	10	19	10	20	20	55	Swedish	Swedish Lloyds	285.0	41.0	18.6	New Orleans	Guayaquil	General	1,769	3,322	1,431
Dryden	10	6	30	10	12	55	10	20	40	10	21	55	American	Barber Steamship Co. (S. B.)	434.0	57.6	28.0	New York	Yokohama.	General	9,103	7,983	5,882
City of Melbourne	10	8	21	11	6	35	11	14	04	11	15	25	British	Ellerman Hall Line	412.0	55.0	28.0	New York	Yokohama.	General	9,400	6,799	4,763
Eastern Planet	10	15	05	11	7	30	11	15	39	11	17	00	American	U. S. & Australia Line (S. B.)	384.8	51.2	27.6	New York	Brisbane.	Oil and general	5,000	6,235	4,480
K. R. Kingsbury	10	19	37	11	8	20	11	17	37	11	18	30	American	Standard Oil Co.	440.0	58.2	22.4	Liverpool	San Francisco.	Ballast	9,033	5,038	
Santa Tecla	11	5	06	11	8	20	11	19	31	11	20	40	American	W. R. Grace & Co.	298.6	40.0	20.4	New York	Supe	General	2,377	2,885	1,827

² Steel products and sulphate ammonia.

Landed.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Feb. 5.	Zacapa.	United Fruit Co.	New Orleans via Habana.	Feb. 5.	Linda S. ⁶	Surgeon Brothers.	Colon.
Feb. 6.	Cartago.	United Fruit Co.	New Orleans.	Feb. 6.	Zacapa.	United Fruit Co.	Bocas del Toro.
Feb. 6.	Aguihuayre.	Agui Steamship Co.	Palo Blanco.	Feb. 6.	Advance.	Panama Railroad Steamship Line	Cartagena.
Feb. 8.	Turrialba.	United Fruit Co.	Colombian ports.	Feb. 7.	Tanar.	Royal Mail Steam Packet Co.	Cartagena.
Feb. 9.	Zacapa.	United Fruit Co.	Bocas del Toro.	Feb. 8.	Aguihuayre.	Agui Steamship Co.	Puerto Lobos.
Feb. 9.	Moctan.	United Fruit Co.	New York via Kingston.	Feb. 9.	Cartago.	United Fruit Co.	New Orleans and way-ports.
Feb. 10.	Calamates.	United Fruit Co.	New York via wayports.	Feb. 9.	Turrialba.	United Fruit Co.	New York via Kingston.
Feb. 10.	San Benito.	United Fruit Co.	Boston via wayports.	Feb. 9.	Zacapa.	United Fruit Co.	New Orleans.
Feb. 11.	Oranien.	Leyland Line.	Liverpool and wayports.	Feb. 10.	Metapan.	United Fruit Co.	New York via wayports.
				Feb. 10.	Panamá.	Panama Railroad Steamship Line	New York via Haiti.
				Feb. 11.	Calamates.	United Fruit Co.	New York via wayports.
				Feb. 11.	San Benito.	United Fruit Co.	Boston.

⁶ Motor schooner.

PORT OF BALBOA.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Feb. 5.	Sinaloa.	A. O. Lindvig.	Talara.	Feb. 5.	Sinaloa.	A. O. Lindvig.	San Francisco.
Feb. 5.	Meriden.	General Steamship Corporation.	San Francisco.	Feb. 7.	Meriden.	General Steamship Corporation.	Mollendo, Peru.

* Other than ships passing through the Canal.

³ Nitrate, bran, oil cake, sugar, and general.⁴ Chilled fruit and general.⁵ Bulk grain and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Feb. 5.	Zacapa.	United Fruit Co.	New Orleans via Habana.	Feb. 5.	Linda S. ⁶	Surgeon Brothers.	Colon.
Feb. 6.	Cartago.	United Fruit Co.	New Orleans.	Feb. 6.	Zacapa.	United Fruit Co.	Bocas del Toro.
Feb. 6.	Aguihuayre.	Agui Steamship Co.	Palo Blanco.	Feb. 6.	Advance.	Panama Railroad Steamship Line	Cartagena.
Feb. 8.	Turrialba.	United Fruit Co.	Colombian ports.	Feb. 7.	Tanar.	Royal Mail Steam Packet Co.	Cartagena.
Feb. 9.	Zacapa.	United Fruit Co.	Bocas del Toro.	Feb. 8.	Aguihuayre.	Agui Steamship Co.	Puerto Lobos.
Feb. 9.	Moctan.	United Fruit Co.	New York via Kingston.	Feb. 9.	Cartago.	United Fruit Co.	New Orleans and way-ports.
Feb. 10.	Calamates.	United Fruit Co.	New York via wayports.	Feb. 9.	Turrialba.	United Fruit Co.	New York via Kingston.
Feb. 10.	San Benito.	United Fruit Co.	Boston via wayports.	Feb. 9.	Zacapa.	United Fruit Co.	New Orleans.
Feb. 11.	Oranien.	Leyland Line.	Liverpool and wayports.	Feb. 10.	Metapan.	United Fruit Co.	New York via wayports.
				Feb. 10.	Panamá.	Panama Railroad Steamship Line	New York via Haiti.
				Feb. 11.	Calamates.	United Fruit Co.	New York via wayports.
				Feb. 11.	San Benito.	United Fruit Co.	Boston.

*ARRIVALS.

*DEPARTURES.

Commercial Traffic Through the Panama Canal in January, 1922, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>United States coastwise:</i>							<i>Long tons.</i>
United States.....	28	113,297	138,928	172,338	118,266	\$141,404.35	119,413
<i>From United States to Far East:</i>							
United States.....	6	24,905	32,064	37,587	24,741	31,131.25	50,899
British.....	5	24,669	30,170	35,314	23,359	30,668.15	42,045
Japanese.....	4	17,272	19,215	26,019	16,626	21,409.30	28,995
Totals.....	15	66,846	81,449	98,920	64,726	83,208.70	121,939
<i>From Europe to west coast of South America:</i>							
British.....	6	19,822	25,164	31,750	20,379	21,953.93	9,784
Italian.....	2	5,822	7,299	10,044	5,836	7,277.50	1,273
Chilean.....	1	1,443	1,507	2,516	1,443	1,803.75	2,795
Dutch.....	1	2,290	3,660	3,689	2,291	2,862.50	685
French.....	1	4,288	4,409	5,564	3,524	5,290.80	175
German.....	1	2,957	3,486	4,750	2,969	3,696.25	3,200
Totals.....	12	36,622	45,525	58,313	36,442	42,884.73	17,912
<i>From east coast of United States to west coast of South America:</i>							
United States.....	5	11,850	15,882	19,923	11,941	14,808.80	8,368
British.....	4	9,678	13,639	18,193	10,363	12,097.50	6,327
Norwegian.....	1	881	1,479	1,493	873	1,101.25	64
Swedish.....	1	1,091	1,227	1,825	1,282	1,363.75	1,943
Totals.....	11	23,500	32,227	41,434	24,459	29,371.30	16,702
<i>From Cristobal, C. Z., to west coast of South America:</i>							
British.....	5	1,874	2,604	3,432	2,080	2,342.50	823
Chilean.....	2	3,260	5,645	6,367	3,888	4,075.00	955
Peruvian.....	2	2,710	5,337	9,147	4,763	3,387.50	480
United States.....	1	336	350	615	372	252.00	.....
Totals.....	10	8,180	13,936	19,561	11,103	10,057.00	2,258
<i>From Europe to west coast of United States:</i>							
British.....	2	8,925	11,882	14,127	8,954	9,426.23	3,423
Danish.....	1	3,221	3,289	3,901	3,329	3,946.80	4,800
Dutch.....	1	2,252	3,524	3,699	2,226	2,815.00	5,407
French.....	1	4,483	4,515	4,731	2,912	5,418.00	800
Norwegian.....	1	3,137	3,930	5,128	3,129	3,921.25	6,050
United States.....	1	978	1,103	1,508	809	1,222.50	397
Totals.....	7	22,996	28,243	33,094	21,359	26,749.78	20,877
<i>From Europe to Australasia:</i>							
British.....	10	48,436	57,000	74,763	48,743	60,352.25	46,096
<i>From east coast of United States to Australasia:</i>							
British.....	4	16,124	22,366	25,501	16,218	20,155.00	22,634
<i>From east coast of Mexico to west coast of South America:</i>							
United States.....	2	8,453	10,118	12,604	8,453	10,566.25	18,400
British.....	1	4,645	5,311	7,270	4,513	5,806.25	9,600
Norwegian.....	1	4,418	5,043	6,987	4,422	5,522.50	9,152
Totals.....	4	17,516	20,472	26,861	17,388	21,895.00	37,152
<i>From West Indies to Far East:</i>							
Japanese.....	2	8,716	8,798	11,714	8,518	10,639.20	14,514
Norwegian.....	1	2,917	2,945	3,512	2,296	3,534.00	5,100
British.....	1	2,759	3,397	4,296	2,792	3,448.75	5,700
Totals.....	4	14,392	15,140	19,522	13,606	17,621.95	25,314
<i>From Europe to west coast of Canada:</i>							
British.....	3	9,650	12,003	15,517	9,712	12,062.50	10,482
Dutch.....	1	5,403	6,612	8,384	5,437	6,753.75	5,390
Totals.....	4	15,053	18,615	23,901	15,149	18,816.25	15,872
<i>From West Indies to Balboa, C. Z.:</i>							
British.....	1	3,255	3,714	5,631	3,230	4,068.75	8,000
Danish.....	1	167	180	360	170	129.60	.....
Totals.....	2	3,422	3,894	5,991	3,400	4,198.35	8,000
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	2	2,986	3,756	4,796	2,963	3,732.50	4,112

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From Europe to west coast of Central America:</i>							<i>Long tons.</i>
German	1	1,807	3,003	3,106	1,809	\$2,258.75	746
<i>From Europe to west coast of Mexico:</i>							
British	1	753	929	1,478	841	941.25	125
<i>From east coast of Mexico to west coast of Canada:</i>							
British	1	8,029	8,130	10,831	7,530	9,756.00	15,000
<i>From east coast of South America to Far East:</i>							
Japanese	1	3,645	4,289	5,790	3,564	4,556.25	3,185
<i>From east coast of United States to west coast of Canada:</i>							
United States	1	3,599	4,900	5,680	3,508	4,498.75	2,521
<i>From east coast of Canada to Australasia:</i>							
British	1	3,513	4,160	5,454	3,340	4,391.25	5,499
<i>From West Indies to west coast of Canada:</i>							
British	1	2,743	3,622	4,436	2,809	3,428.75	4,200
<i>From east coast of Mexico to Balboa, C. Z.:</i>							
United States	1	1,646	1,669	1,810	1,748	2,002.80	2,523
<i>From Cristobal, C. Z., to west coast of Central America:</i>							
British	1	638	706	1,170	654	797.50	1,021
<i>Canadian coastwise:</i>							
British	1	170	183	483	192	131.76	
<i>Colombian coastwise:</i>							
British	1	614	622	1,138	602	746.40	490
<i>Miscellaneous:</i>							
British	1	(¹)	(¹)	(¹)	(¹)	2,300.00	
Totals	125	416,527	513,764	646,371	420,419	516,256.62	493,591

¹ Displacement, 4,600 tons.

PACIFIC TO ATLANTIC.

<i>United States coastwise:</i>							
United States	20	89,152	108,921	130,404	86,958	\$111,440.00	86,862
<i>From west coast of South America to Europe:</i>							
British	6	20,740	25,284	34,616	20,993	25,925.00	30,341
Danish	1	1,661	2,058	2,631	1,682	1,481.76	
Dutch	1	4,085	4,393	4,368	2,726	5,106.25	6,815
French	1	3,566	4,081	5,681	3,600	4,457.50	6,127
German	1	2,531	3,374	4,174	2,584	3,163.75	5,900
Italian	1	3,097	3,599	5,376	3,082	3,871.25	4,630
Totals	11	35,680	42,789	56,846	34,667	44,005.51	53,813
<i>From west coast of South America to Cristobal, C. Z.:</i>							
British	3	675	1,028	1,263	815	843.75	391
Chilean	2	3,260	5,645	6,367	3,888	4,075.00	883
Peruvian	2	2,710	5,337	9,147	4,763	3,387.50	4,119
United States	2	668	670	1,230	746	804.00	801
Panamanian	1	69	69	123	72	51.75	
Totals	10	7,382	12,749	18,130	10,284	9,162.00	6,194
<i>From west coast of South America to east coast of United States:</i>							
United States	5	13,612	17,421	21,893	13,359	17,015.00	20,795
British	3	7,806	10,863	14,484	8,432	9,757.50	8,842
Norwegian	1	866	999	1,406	875	1,082.50	1,211
Totals	9	22,284	29,283	37,783	22,666	27,855.00	30,848
<i>From west coast of United States to Europe:</i>							
British	2	7,852	8,400	11,947	7,358	9,692.85	12,466
Japanese	3	12,218	13,156	17,162	11,945	15,091.65	20,890
United States	2	7,486	10,408	12,234	7,485	9,357.50	14,830
Totals	7	27,556	31,964	41,343	26,788	34,142.00	48,186
<i>From west coast of Canada to east coast of United States:</i>							
United States	2	6,962	9,665	11,701	7,208	8,702.50	11,826

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From west coast of Canada to Europe:</i>							<i>Long tons.</i>
British.....	2	8,834	11,570	14,002	8,877	\$11,042.50	12,963
Dutch.....	1	4,863	6,066	7,655	4,799	6,078.75	6,376
United States.....	1	4,402	4,443	5,718	4,297	5,385.60	7,056
Totals.....	4	18,099	22,079	27,375	17,973	22,506.85	26,395
<i>From Australasia to Europe:</i>							
British.....	3	13,995	16,394	20,700	12,842	17,493.75	18,061
Danish.....	1	1,754	2,166	2,925	1,748	2,192.50	2,218
Totals.....	4	15,749	18,560	23,625	14,590	19,686.25	20,279
<i>From west coast of South America to east coast of Mexico:</i>							
British.....	1	4,645	5,311	7,270	4,513	3,823.92	
Norwegian.....	1	4,407	5,051	7,022	4,438	3,636.72	
United States.....	1	4,203	5,041	6,703	4,203	3,629.52	
Totals.....	3	13,255	15,403	20,995	13,154	11,090.16	
<i>From Far East to east coast of United States:</i>							
Japanese.....	2	9,688	10,475	13,934	9,450	11,961.05	14,845
<i>From Australasia to east coast of United States:</i>							
United States.....	1	4,530	4,561	5,840	4,497	5,473.20	6,800
British.....	1	3,490	4,051	5,384	3,311	4,362.50	2,000
Totals.....	2	8,020	8,612	11,224	7,808	9,835.70	8,800
<i>From west coast of Central America to east coast of United States:</i>							
United States.....	2	1,377	1,381	1,544	1,334	1,721.25	2,836
<i>From west coast of Central America to Cristobal, C. Z.:</i>							
British.....	2	1,401	1,577	2,731	1,463	1,751.25	860
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	128
<i>From Balboa, C. Z., to West Indies:</i>							
Danish.....	1	167	180	360	170	129.60	
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,537	4,901	5,657	3,536	4,421.25	1,188
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	1	1,654	2,163	2,643	1,654	2,067.50	655
<i>From Far East to east coast of Mexico:</i>							
Japanese.....	1	5,513	6,385	9,049	6,502	4,597.20	
<i>From west coast of United States to east coast of Mexico:</i>							
United States.....	1	4,418	5,043	6,987	4,422	3,630.96	
<i>Miscellaneous:</i>							
British.....	1	(¹)	(¹)	(¹)	(¹)	2,058.50	
Totals.....	85	272,508	332,752	423,469	271,229	331,510.93	313,707

¹ Displacement, 4,117 tons.

Trial Installation of Gas in Canal Zone Quarters.

The Panama Gas Company has been given permission to make several trial gas installations for cooking in Canal Zone quarters, under provisions that the test be without expense or obligation on the part of The Panama Canal, and with the consent of the occupants of the quarters in which the trial installations are made. The company has extended mains from Panama to about eight quarters in Ancon, near the boundary, and the laying of pipes, etc., for the several houses is in progress.

Certificate.

By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

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OFFICIAL PUBLICATION OF THE PANAMA CANAL.

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Volume XV. Balboa Heights, C. Z., February 22, 1922. No. 28.

Wet Storage of Coal.

Both of the coaling plants at the Canal terminals are provided with spaces for the storage of coal under water, as well as in the dry.

No complaint has been made of the combustible qualities of the coal stored subaqueously, but in order to ascertain if other plants had experienced any deterioration from water storage, the Governor requested the Chief of Office in Washington to obtain the conclusions of Mr. H. H. Stoeck, Professor of Mining Engineering at the University of Illinois, as to the relative merits of wet and dry storage of coal. In his reply Professor Stoeck stated:

I would report that several companies in Illinois have used under-water storage apparently with success. One of the first companies to use this form was the Western Electric Company in Chicago which has a number of concrete pits, also the Illinois Traction Company has used this method at several of its larger power plants. Several of the zinc companies in the State have used old sloughs for temporary storage and in a similar manner a number of mines have used these sloughs for excess production. The largest under-water storage plant of which I have been advised is that of the Standard Oil Company at Whiting, Ind., where provision has been made for 100,000 tons. The Duquesne Light Company, of Pittsburgh, also has a large under-water storage plant. In the absence of negative reports from any of these companies I assume they have found under-water storage satisfactory.

Experiments made at the University of Illinois on small quantities of coal under water have shown practically no deterioration.

The 2 large plants above referred to, namely, those of the Standard Oil Company and the Duquesne Light Company, are of too recent construction to have very conclusive results extending over a sufficient period of time.

Under-water storage is, of course, best adapted for fine sizes of run-of-mine coal where it is necessary to have a mixture of sizes and a considerable amount of fine coal and dust in the material stored. If the coal can be properly sized and carefully handled I do not believe it is necessary to have under-water storage as the expense of the plant is, of course, materially greater than ground storage.

Bunker Coal at San Diego and Los Angeles.

Effective January 19, the price of bunker coal at San Diego and Los Angeles was reduced to \$12 per gross ton of 2,240 pounds, f. o. b. vessel alongside dock; trimming extra at actual cost of labor and accident insurance, plus 10 per cent. These prices are quoted by the Spreckels Brothers Commercial Company, subject to change without notice.

Government Hotels to be Offered for Lease.

Consideration is being given to leasing the Hotel Tivoli, at Ancon, and the Hotel Washington, in Colon, and a form of contract is being prepared. It will provide that the lessee purchase the equipment in the hotels. As soon as the form of statements, contract, etc., shall have been approved it is intended to advertise for bids.

Advertisements will be placed in the United States as well as locally and efforts will be made to attract the attention of hotel managements, steamship interests or other organizations or individuals which might be expected to conduct the hotels on a high plane with an aggressive business policy.

MOVEMENTS OF OCEAN VESSELS. Week ending at midnight, February 18, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Mundies	11	16	31	12	6	23	12	13	30	12	14	21				Steel pipe, etc	3,816	5,527	4,009
Jan Van Nassau	11	8	10	12	7	30	12	14	37	12	15	38		New York	San Francisco.	General	1,250	3,819	2,632
Carina	3	18	17	12	7	45	12	15	48	12	16	50		Cristobal	Acajutla	Ballast	1,389	1,011	
Karria Luck-entich	11	23	07	12	8	40	12	16	00	12	17	00		New York	Los Angeles.	General	2,249	8,508	6,109
Vreeman	12	8	15	12	9	27	12	16	38	12	17	38		Philadelphia.	Los Angeles.	General	4,000	10,491	7,546
Canadian Spin-ner	12	7	05	12	10	10	12	17	55	12	19	05		Halifax	Auckland	General, etc.	5,200	5,871	4,004
Robn Adair.	1-21	16	30	13	6	30	13	14	43	13	16	05		New York	Vancouver	Steel, general.	9,550	7,470	5,618
Seola	1-21	21	30	13	6	30	13	14	42					Cristobal	Balboa	Ballast	7,521	5,852	
Godofast	9	12	23	13	7	32	13	15	54	13	17	05		Philadelpha.	Santa Barbara	Ballast	331	4,838	2,959
Haida	9	12	15	13	10	52	13	17	54	14	13	18		New Orleans	Callao	General	7,700	7,539	5,448
Manaro	7	16	35	13	11	05	13	17	14	14	15	15		New York	Yokohama	(s)	2,390	5,957	4,325
Bessemer City.	14	6	20	14	6	40	14	15	41	15	17	15		Cristobal	Chamertico	General	713	1,273	706
Santa Elisa	13	18	39	14	9	22	14	15	41	15	17	15		New York	Manila	General	8,400	6,773	4,973
Acacilla	6	14	25	15	6	07	15	16	23	15	17	15		New York	Singapore.	(r)	5,300	6,250	4,350
Kendal Castle	14	12	30	15	7	05	15	16	23	15	17	35		Baltimore.	Seattle.	General	5,066	8,199	6,250
Honolulu Maru	15	8	07	15	8	25	15	17	41	15	22	37		New York	San Antonio.	Coke	3,314	3,512	2,557
Liberator	15	8	45	15	9	10	15	18	39	15	19	38		New York	Itaque	Fuel oil	8,350	6,434	4,383
Adour	14	17	26	15	10	25	15	18	40	15	19	58		Tampico.	Balboa	Ballast	3,016	6,441	4,900
San Tirso	15	9	35	15	11	00	15	19	45	15	21	04		Cristobal	Valparaiso	General	2,947	2,113	
Mariposa	15	10	00	16	6	17	16	14	03	16	22	35		Cartagena	Balboa	Ballast	8,401	6,096	
Kentua	13	15	49	16	7	08	16	15	40					Valle	Talara	General	430	5,624	3,844
Advance	16	9	29	16	9	50	16	16	47	16	23	30			Balboa	General	3,750	7,091	5,002
Calanholite	13	23	50	16	10	28	16	18	05							General	323	1,357	884
Buenos Aires.	17	6	10	17	7	40	17	15	38	17	17	00		New York	Los Angeles.	General	1,700	6,033	4,353
Isoran	11	21	25	17	12	10	17	18	51	17	21	00		Cristobal	Guayaquil	General			
Manavi	17	12	35	18	13	00	18	19	19	19	19	55		New York	San Francisco	General			
Venezuela	17	12	35	18	13	00	18	19	19	19	19	55		New York		General			

Yacht.

Launch.

Transiting Canal for repairs.

Steel, cotton, and sulphate of ammonia.

Machinery, tinplate, rosin, merchandise, steerails, copper ingots, and cotton.

¹ Tug. ² Yacht. ³ Launch. ⁴ Transiting Canal for repairs.

⁵ Steel, cotton, and sulphate of ammonia.

⁶ Machinery, tinplate, rosin, merchandise, steel rails, copper ingots, and cotton.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Ship.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	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⁷ Coffee, hides, and general.

⁸ Lumber and canned goods.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Feb. 12	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	New York via Haiti.	Feb. 13	Atenas	United Fruit Co.	Bocas del Toro.
Feb. 12	Atenas.	Panama Railroad Steamship Line.	New Orleans via Habana.	Feb. 15	Solana.	Pacific Mail Steamship Co.	Tampico.
Feb. 13	Heredia.	United Fruit Co.	New Orleans.	Feb. 15	San Blas.	United Fruit Co.	Boston.
Feb. 14	San Blas.	United Fruit Co.	Boston via wayports.	Feb. 15	Oranian.	Leyland Line	New Orleans.
Feb. 15	Haiti.	French Line.	St. Nazaire via wayports.	Feb. 16	Heredia	United Fruit Co.	New Orleans via wayports.
Feb. 16	Atenas.	United Fruit Co.	Bocas del Toro.	Feb. 16	Atenas	United Fruit Co.	New Orleans.
Feb. 16	San Juan.	Bluefields Fruit Co.	Bluefields.	Feb. 16	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	New York via Haiti.
Feb. 17	Pastores.	United Fruit Co.	New York via wayports.	Feb. 18	Pastores.	United Fruit Co.	New York via wayports.
Feb. 18	Bayano.	Elders & Fyffes Ltd.	Port Limon.	Feb. 18	Bayano	Elders & Fyffes, Ltd.	Kingsston.
Feb. 18	Colon.	Panama Railroad Steamship Line.	New York via Haiti.	Feb. 18	Haiti	French Line.	Puerto Colombia.
PORT OF BALBOA.							
Feb. 13	Yorba Linda. ¹⁷	General Petroleum Co.	Antofagasta.	Feb. 13	Yorba Linda	General Petroleum Co.	Los Angeles.
Feb. 18	Seiyo Maru.	Toyo Kisen Kaisha	Valparaiso.				

¹⁷ Did not enter harbor.

*Other than ships passing through the Canal.

* Motor schooner. ** H. M. S. cruiser. ** For orders. ** Wheat, lumber, and general. ** Lumber, copper, and general. ** Wheat, fruit, coffee, and cocoa. ** Beans, hay, coffee, and canned goods.

¹⁶ Coffee, cocoa, and ivory nuts. Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Feb. 12	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	New York via Haiti.	Feb. 13	Atenas	United Fruit Co.	Bocas del Toro.
Feb. 12	Atenas.	Panama Railroad Steamship Line.	New Orleans via Habana.	Feb. 15	Solana.	Pacific Mail Steamship Co.	Tampico.
Feb. 13	Heredia.	United Fruit Co.	New Orleans.	Feb. 15	San Blas.	United Fruit Co.	Boston.
Feb. 14	San Blas.	United Fruit Co.	Boston via wayports.	Feb. 15	Oranian.	Leyland Line	New Orleans.
Feb. 15	Haiti.	French Line.	St. Nazaire via wayports.	Feb. 16	Heredia	United Fruit Co.	New Orleans via wayports.
Feb. 16	Atenas.	United Fruit Co.	Bocas del Toro.	Feb. 16	Atenas	United Fruit Co.	New Orleans.
Feb. 16	San Juan.	Bluefields Fruit Co.	Bluefields.	Feb. 16	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	New York via Haiti.
Feb. 17	Pastores.	United Fruit Co.	New York via wayports.	Feb. 18	Pastores.	United Fruit Co.	New York via wayports.
Feb. 18	Bayano.	Elders & Fyffes Ltd.	Port Limon.	Feb. 18	Bayano	Elders & Fyffes, Ltd.	Kingsston.
Feb. 18	Colon.	Panama Railroad Steamship Line.	New York via Haiti.	Feb. 18	Haiti	French Line.	Puerto Colombia.

¹⁷ Did not enter harbor.

*Other than ships passing through the Canal.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended February 18:

U. S. S. *Sciota*, dock and undock; stage and clean; paint bottom 2 coats of anti-corrosive and 1 coat of antifouling; examine propeller and renew plates as necessary; examine stern tube bushing; repack stern gland; repair valves on steering engine; grind in and repair sea valves; calk rivets and staybolts, Nos. 1 and 2 boilers; renew flame rings in front of boilers; repair boiler valves; renew zinc plates for boilers; renew 1 set of H. P. piston rings, 2 rings for piston valves, I. P. engine and cover for thrust bearing; cut holes in base of wreck and circulating pumps; install regulation hold on top of smokestack; repair rudder and rudder gudgeons; renew hull zincs; renew 12 lenses; recalk leaky rivets in fuel oil compartments; straighten bottom plate of water-tight door; renew tiling in galley where broken; steamships *Buenos Aires*, dock and undock; install 1 plate on hull, port side; *Advance*, dock and undock; stage and clean; tug *Gorgona*, dock and undock; stage and clean; barge *No. 135*, straighten coaming; tighten bad order rivets; drill barge *No. L-255*, remove from water and place on dock; remove copper sheathing in spots for examination of hull.

PREVIOUSLY REPORTED:

Motorship *Pedro Christopherson*, repair auxiliary engine crank shaft and minor running repairs; *James Timpson*, dock and undock; clean and paint bottom; renew damaged section of keel and miscellaneous repairs in engineer's department; tug *Mariner*, dock and undock; scale and paint bottom and convert from coal burner to oil burner as per specifications; barges *No. 132*, dock and undock; scale and paint bottom and necessary repairs below the water line, on hull; *No. 134*, dock and undock; scale and paint bottom and necessary repairs below the water line, on hull.

The following vessels were at the Cristobal shops for repairs during the two weeks ended February 20:

Steamships *Acajulla*, dock and undock; clean and paint hull; calk seam; face up donkey and feed pump check valves and seats, starboard boiler; overhaul refrigerator circulating pump and auxiliary feed pump; install cable holders on windlass; examine and repair sea inlets and fastenings, etc.; *Salvador*, renew exhaust pipe on oil fuel pump; manufacture 2 crossheads and 2 steel crank-pin bolts for refrigerator; manufacture 3 pipe box spanners; make 12 copper rings; manufacture 2 oil burner yokes; make 2 strainer cages; repair coil; make 6 valve stems and nuts, etc.; *Mantaro*, furnish diver and diving outfit to install patch on hull; yacht *Haida*, make and install 1 main boom; make new after launch chock; repair forecable head and rail; shift forestays and travelers and make partners for same; paint port side with 1 coat of paint; make and install galley stack; make new gear for generator, etc.; steamships *Advance*, connect blower engine fan casing to thwart ship bulkhead with angle iron stiffeners; *Heredia*, repair copper pipe and renew hydraulic pipe; *General C. W. Goethals*, braze flange on suction pipe and repair fire line; U. S. S. *O-11* and *O-13*, rivet engine foundations; tug *Tavernilla*, weld seam in boiler; regrind suction valve; test main condenser and make necessary repairs; overhaul boiler check and blow valves; scale boiler, etc.; steamship *Manavi*, renew sections of ash guard and flooring in stokehold; bore balance piston chamber and manufacture new rings, etc.; grader *No. 1*, clean, scale, and paint below water line; repair service pump, fuel oil heater and discharge line from fuel pump; overhaul sea valves and strainers; calk manhole flange on boiler; weld leaky seams and rivets; test all tanks; stop all leaks, etc.; steamships *Jamaica*, repair hand rail and locking bar; test boiler; repair force pump; examine and repair ports, etc.; *Dunduth*, clean boilers; renew tubes where directed; renew internal feed pipe on port boiler; electric weld cracks in boiler, etc.; *Cuba*, make valve stem and nut; electric weld crack in port boiler and roll all leaky tubes; *Haiti*, repair copper pipe as directed, etc.; tug *San Juan*, clean and paint bottom; manufacture and install new smokestack and fidley; repair and hang rudder; repair shoe and install same; renew rudder casing; repair hull and calk stem and leaky butts; change propeller; repair main steam pipe; examine and repair all sea valves and strainers, etc.; steamships *Balboa*, manufacture 1 set of steering chains; manufacture 2 eccentric rods for dynamo engine; *Colom*, braze section of steam pipe; furnish 4 cast iron bars for starboard intermediate valve; install patches on tank top; launch *Activo*, renew stud in cylinder cover; install new feather in shaft, etc.

Notice to American Holders of Pre-war Unsecured Bonds of the Former Austrian Government.

The American Consul in Panama, R. P., has requested publication of the following:

Pre-war unsecured bonds issued by the former Austrian government which may be held by American citizens will be received by the Department of State through American Consular officers, and lists thereof will be furnished to the Reparations Commission for such action as may be taken in relation to the bonds.

All bonds submitted should be accompanied by an affidavit of the owner, giving facts regarding citizenship and complete data concerning the bonds, the affidavit to be executed before an American Consular officer, who will give receipts for the bonds and forward them to the State Department.

It is also desirable that information with regard to pre-war bonds of the former Hungarian government held by American citizens should be submitted to the nearest American Consular officer.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending February 18, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Sarpfos	Caribbean Steamship Co.	February 5.	February 6.	13	(²)
Zacapa	United Fruit Co.	February 5.	February 6.	1	177
Advance	Panama Railroad Steamship Line.		February 6.		180
Tamar	Pacific Steam Navigation Co.		February 7.		131
Gen. O. H. Ernst	Panama Railroad Steamship Line.	February 5.	February 7.	329	75
Gen. H. F. Hodges.	Panama Railroad Steamship Line.	February 5.	February 6.	89	112
Aguihavre	Atlantic, Gulf & W. I. S. S. Co.	February 6.	February 8.	10,800	(²)
Cartago	United Fruit Co.	February 6.	February 8.	406	$\frac{1}{2}$
Acajutla	Pacific Steam Navigation Co.	February 6.	February 8.	992	
Imperial	Chilean Line		February 8.		617
Mantaro	Peruvian Line.	February 7.		2,087	
Jason	Royal Netherlands W. I. Mail.	February 8.	February 9.	323	406
Turrialba	United Fruit Co.	February 8.	February 9.	$\frac{1}{2}$	200
Zacapa	United Fruit Co.	February 9.	February 9.	4 $\frac{1}{2}$	$\frac{1}{2}$
Metapan	United Fruit Co.	February 9.	February 10.	73	163
Holmia	N. O. & S. A. Steamship Line.	February 10.	February 10.	220	(²)
Calamares	United Fruit Co.	February 10.	February 11.	119	399
Jan Van Nassau	Royal Netherlands W. I. Mail.	February 11.		161	
San Benito	United Fruit Co.	February 11.	February 11.	1	(²)
Manavi	Pacific Steam Navigation Co.	February 11.		95	
Oranian	Leyland Line	February 11.		398	
Atenas	United Fruit Co.	February 12.	February 13.	(¹)	42
Mantaro	Peruvian Line.		February 13.		358
Targis	Roland Steamship Line.	February 12.	February 14.	900	(²)
Oranian	Leyland Line.		February 15.		999
Acajutla	Pacific Steam Navigation Co.		February 15.		724
Gen. G. W. Goethals	Panama Railroad Steamship Line.	February 12.	February 17.	2,006	1,621
Advance	Panama Railroad Steamship Line.	February 13.		590	
Heredia	United Fruit Co.	February 13.		987	31
Buenos Aires	Spanish Line	February 13.		153	
San Blas	United Fruit Co.	February 14.	February 15.	19	183
Jamaica	Pacific Steam Navigation Co.	February 14.	February 16.	258	2
Cuba	Pacific Mail Steamship Co.	February 14.		1,652	
Kenuta	Pacific Steam Navigation Co.	February 15.	February 16.	6	225
Haiti	French Line	February 15.	February 18.	6	321
Atenas	United Fruit Co.	February 16.	February 16.	4	2
Ecuador	Pacific Mail Steamship Co.	February 16.	February 17.	488	258
Manavi	Pacific Steam Navigation Co.		February 17.		332
Iowan	American-Hawaiian Steamship Co.	February 17.	February 17.	7	(²)
Pastores	United Fruit Co.	February 17.	February 18.	152	194
Venezuela	Pacific Mail Steamship Co.	February 17.	February 18.	340	1,074
Colon	Panama Railroad Steamship Line	February 18.		1,906	
Bayano	Elders & Fyffes, Ltd.	February 18.		10	4
Alvarado	Pacific Steam Navigation Co.	February 18.	February 18.	24	
Huasco	Chilean Line	February 18.		153	
Laura C. Hall	Pacific Metals Corporation	February 18.		36	

¹ No cargo discharged.

² No cargo laded.

³ Pounds.

⁴ Packages.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Balboa for Three Weeks Ending February 18, 1922.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Hwah Ping.....	Chinese Government.....	January 30.....	January 31.....	218	
Romulus.....	A. O. Lindvig.....	January 31.....	February 1.....	400	
Laurelleaf.....	Anglo-Saxon Petroleum Co.....	January 31.....	February 2.....	8,000	
Jamaica.....	Pacific Steam Navigation Co.....	February 1.....	February 1.....	11	7
Laura C. Hall.....	Pacific Metals Corporation.....	February 2.....	February 3.....	12	
Corning.....	Standard Oil Co.....	February 1.....	February 3.....	6,429	
Valparaiso.....	Johnson Line.....	February 3.....	February 3.....	27	
Barima.....	Pacific Steam Navigation Co.....	February 3.....	February 3.....		1
Imperial.....	Chilean Line.....	February 3.....	February 4.....	35	
Laura C. Hall.....	Pacific Metals Corporation.....	February 4.....	February 4.....		85
Acajutla.....	Pacific Steam Navigation Co.....	February 5.....	February 6.....	14	
Meriden.....	General Steamship Corporation.....	February 6.....	February 7.....	200	40
Mineola.....	W. R. Grace & Co.....	February 6.....	February 6.....	43	
Salvador.....	Pacific Steam Navigation Co.....	February 6.....	February 6.....	3	
Manavi.....	Pacific Steam Navigation Co.....	February 8.....	February 8.....		16
Cuba.....	Pacific Mail Steamship Co.....	February 11.....	February 11.....	10	
Santa Elisa.....	W. R. Grace & Co.....	February 13.....	February 14.....	28	1
Ecuador.....	Pacific Mail Steamship Co.....	February 14.....	February 15.....	1	
Manavi.....	Pacific Steam Navigation Co.....	February 15.....	February 16.....	36	
Laura C. Hall.....	Pacific Metals Corporation.....	February 17.....	February 17.....		7
Huasco.....	Chilean Line.....	February 17.....	February 18.....	9	
Seiyo Maru.....	Toyo Kisen Kaisha.....	February 17.....	February 18.....	22	
Alvarado.....	Pacific Steam Navigation Co.....	February 18.....	February 18.....	15	96
Venezuela.....	Pacific Mail Steamship Co.....	February 18.....	February 18.....	8	
				2	26

Supplement No. 12 to Tariff "B," Class I—Equipment, Use of.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., February 11, 1922.

ITEM 7.—CAR SERVICE.

No demurrage charge will be made for Sundays and holidays in the case of cars inspected, lubricated, and given minor repairs by divisions to which regularly assigned.

M. L. WALKER,

*Acting Governor, The Panama Canal.
2d Vice President, Panama Railroad Company.*

Orchids for Ancon Hospital Garden.

An orchid garden has been begun at Ancon Hospital to supply flowers for the wards and private rooms of the hospital for the benefit of the sick. The hospital would appreciate any contributions in the line of orchids, as there are no funds available for their purchase. Due acknowledgment will be made to contributors.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Mannuel (Guillermo) Aranda.....	22361	Mexico.....	Panama.....	Supply Department.....	January 21, 1922.
John Russell.....	20471	Jamaica.....	Panama.....	Supply Department.....	January 27, 1922.
John M. Keough.....	4454	United States.....	Ballou.....	Panama Canal.....	February 5, 1922.
James Rouse.....	25207	Barbados.....	Cristobal.....	Panama Railroad.....	January 24, 1922.
Samuel Henry Reid.....	26540	Jamaica.....	Panama.....	Panama Canal.....	February 1, 1922.
William Warren.....	40207	Jamaica.....	Colon.....	Panama Railroad.....	February 4, 1922.

Official Circulars.

Admission to Docks.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., February 13, 1922.

HEADS OF DEPARTMENTS AND DIVISIONS:

Mimeographed circular of the Governor, dated October 4, 1919, on the above subject, is hereby amended, in so far as concerns the Gristobal dock area, by striking out the present paragraphs 3 and 4 and inserting in place thereof the following: "3. Identification under each of the foregoing headings shall be established in the following manner:

"Items (a), (b), (c), and (f) above referred to upon proper identification by the police officer at the main entrance.

"Representatives of shipping and commercial interests, and contractors or subcontractors and their foremen will be admitted upon annual pass issued by the Executive Secretary upon recommendation of the Receiving and Forwarding Agent after consultation with the Port Captain, the Chief Customs Inspector, and the Police District Commander. Silver gangs of the above concerns shall be checked in by the timekeepers or foremen at the main entrance.

"Silver employees of the U. S. Government. The Panama Canal, or the Panama Railroad will be checked in at the main entrance by the timekeeper or foreman.

"4. Persons not mentioned in the foregoing are denied entrance to the piers and docks, except under special circumstances, which, in the opinion of the Captain of the Port, the Receiving and Forwarding Agent, or the Chief Customs Inspector, justify the issuance of a single trip permit, or in exceptional cases, of a permit for a reasonable period. Each of the above-mentioned officials shall also issue such passes as may be necessary in connection with their duties.

"All persons visiting the docks (with proper pass) as escorts or companions of arriving or departing passengers shall keep clear of the dock aprons and of ships' gangways, and such persons must confine themselves strictly to the dock sheds.

"Outgoing passengers will be permitted to embark at all hours, but vessels upon which such passengers have previously obtained transportation shall be required to receive them on board immediately after their admission within the dock area.

"All traffic excepting employees of the United States Government, The Panama Canal, and Panama Railroad traveling on official business to and from the coaling plant at Cristobal, must enter and leave via the main entrance at the Terminal Building."

M. L. WALKER.

Acting Governor.

NOTE—The effect of the changes made by the above is that the Receiving and Forwarding Agent, instead of the Captain of the Port, has immediate charge of the issuance of annual passes; and that single-trip or "reasonable period" passes may be issued by the Receiving and Forwarding Agent, the Captain of the Port, or the Chief Customs Inspector.

Scrap Prices.

THE PANAMA CANAL,
SUPPLY DEPARTMENT.

BALBOA HEIGHTS, C. Z., February 11, 1922.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective February 15, 1922, the following prices will be allowed by the Supply Department for scrap turned in by the various departments and divisions of The Panama Canal. The selling

prices to departments and divisions, employees, and to individuals and companies are also indicated:

Kind of scrap.	Credit to be allowed divisions.	Issue and sale prices.	
		To departments of The Panama Canal.	To employees and individuals and companies.
	Short ton.	Short ton.	Short ton.
Cast iron, including car wheels.	\$5.00	\$6.00	\$25.00
Miscellaneous wrought iron and steel.	3.00	4.00	20.00
Rail scrap, grade No. 4.	3.00	4.00	20.00
Rail, relaying, grade No. 2.	17.00	18.00	35.00
Rail, relaying, grade No. 3.	9.00	10.00	30.00
Aluminum.	8.00	9.00	25.00
Babbitt.	2.00	3.00	10.00
Bags and burlap.	.50	1.00	
Brass, mixed.	4.00	5.00	10.00
Brass, borings and turnings.	4.00	5.00	10.00
Bronze screening.	4.00	5.00	15.00
Canvas.	.50	1.00	
Copper, mixed.	8.00	9.00	20.00
Cork.	1.00	2.00	10.00
Hose.	.50	1.00	6.00
Lead.	1.00	2.00	5.00
Leather.	.50	1.00	3.00
Pewter.	10.00	11.00	50.00
Rags.	.50	1.00	5.00
Rope.	.50	1.00	5.00
Rubber.	.50	1.00	6.00
Tool steel.	5.00	6.00	25.00
Zinc.	1.00	2.00	5.00

ROY R. WATSON,
Acting Chief Quartermaster.

Diplomatic and Consular Officers.

The following list of the diplomatic and consular corps accredited to the Republic of Panama as of January 1, 1922, has been furnished by the American Consul at Panama:

Panama City.

Argentina, Ricardo C. Acuna, Consul General; Rafael Gutieri.

Belgium, Julio Heurtematte, Consul (Honorary).

Bolivia, Samuel Boyd, Consul General (Honorary).

Brazil, Jorge D. Arias F., Consular Agent (Honorary).

Chile, Juan Antonio Rios, Consul General and Charge d'Affaires; Virgilio Capriles, Consular Agent (Honorary).

China, Woo Pei Kuang, Consul General; Y. S. Lu, Vice Consul.

Cuba, Carlos A. Vasseur y Po, Minister Resident (absent); Osvaldo Lamar y Galvez, Secretary of Legation.

Denmark, Joshua L. Maduro, Consul (Honorary).

Ecuador, Francisco Ochoa Ortiz, Consul General.

Finland, Ramon Arias F., Consul (Honorary).

France, Maurice de Simonin, Charge d'Affaires.

Great Britain, A. Percy Bennett, C. M. G., E. E., and M. P. (absent); Constantine Graham, Charge d'Affaires (Acting Consul, Colon); E. S. Humber, Acting Vice Consul.

Greece, Ramon Arias F., Consul (Honorary).

Guatemala, J. F. Arango, Consul General (Honorary).

Honduras, Marcos E. Velasquez, Consul General (Honorary).

Italy, L. Delpiano (in charge) Consul Regent.
Japan, Kisaku Ichikawa, Consul.

Mexico, F. Ballesteros, Consul; E. Espino, Counciller.

The Netherlands, David M. Sasso, Consul General (Honorary).

Nicaragua, Marcos E. Velasquez, Charge d'Affaires and Consul General.

Norway, T. H. Jacome, Vice Consul (Honorary).

Paraguay, Juan Brin, Consul General (Honorary).

Peru, Guillermo Espantoso, Consul General and Charge d'Affairs; Julio C. Piedra, C., Chancellor; Alberto B. de Obarrio, Consular Agent (Honorary).

Portugal, Jose Arango, Consul (Honorary); Esteban Duran, Vice Consul (Honorary).

Salvador, Ernesto A. Boyd, Consul General (Honorary).

Spain, Tomas Rodriguez y Rodriguez, Charge d'Affaires and Consul.

Sweden, B. Malo, Consul (Honorary).

Switzerland, Jose Misteli, Consul (Honorary); Alberto Antenen, Chancellor (Honorary).

United States, John G. South, E. E. and M. P.; J. Donald B. Rogers, Secretary of Legation; Maj. Fred T. Cruse, Military Attaché; George Orr, Consul; Harry D. Myers, Vice Consul.

Venezuela, Virgilio Capriles, Vice Consul (Honorary).

Colon.

Belgium, J. J. Henriquez, Vice Consul (Honorary).

Bolivia, Jorge E. Boyd, Acting Consul (Honorary).

Chile, J. V. Delgado, Consul (Honorary).

Cuba, Jose Dominguez Romay, Consul; Beren Cervantes, Counciller.

Denmark, J. V. Beverhoudt, Vice Consul (Honorary).

France, Lucien Lupesteur, Chancellor (absent); Teomel Hauradon, Acting Chancellor.

Great Britain, William Ewing, Acting Consul (actual title, Vice Consul, Panama City); Hugh W. Border, Vice Consul.

Guatemala, Vicente Delgado, Consul (Honorary).

Haiti, H. V. Seixas, Consul General (Honorary).

Honduras, Ramon Garcia de Paredes, Vice Consul (Honorary).

Italy, Dr. Miguel Papio, Consular Agent (Honorary).

Mexico, Inocencio Galindo, Vice Consul (Honorary).

The Netherlands, J. J. Ecker, Consul (Honorary).

Nicaragua, Roberto Feuillebois, Consul (Honorary).

Norway, D. S. Webster, Acting Consul (Honorary); Sigurd Schjott, Vice Consul (Honorary).

Peru, J. C. Mejia, Consul (Honorary).

Portugal, Ruben S. Arcia, Consul (Honorary); Ofilio Hazera, Vice Consul (Honorary).

Santo Domingo, Joshua J. Henriquez, Vice Consul (Honorary).

Spain, Francisco Andrade Polanco, Consul (Honorary).

Sweden, J. J. Ecker, Vice Consul (Honorary).

United States, Dr. Julius D. Dreher, Consul; Odin G. Loren, Vice Consul.

Venezuela, Fernando Diaz Paul, Consul General.

Bocas del Toro.

Great Britain, William H. Ponton, Vice Consul.
Nicaragua, Solomon H. Canoan, Consul (Honorary).

Portugal, E. C. McFarland, Vice Consul (Honorary).

United States, W. M. Denby, Consular Agent.

David.

France, Eugene Loeffler, Vice Consul (Honorary).

Spain, Emilio Olave, Consular Agent (Honorary).

Santiago de Veraguas.

Spain, Julio Garcia Sierra, Vice Consul (Honorary).

Colombia.

Colombia has no diplomatic or consular representative in Panama. Ernesto Lozada, Private Postal Agent, is in charge of Colombian affairs in Panama City. Miguel Vargas is Private Postal Agent at Colon.

Hours of Departure of Passenger Trains.

Following are the hours of departure of the passenger trains of the Panama Railroad running between the Atlantic and the Pacific:

From Colon: 9.10 a. m., 12.15 p. m., 4 p. m.

From Panama: 7 a. m., 12.15 p. m., 6.10 p. m.

The trains leaving at 12.15 p. m. do not run on Sundays and holidays; the others are daily.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line), Pacific Mail Steamship Company, and Matson Line. The two last named charge \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Typewriters For Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, model 4. Price range from \$20 to \$30. Inspection can be made by applying to Storekeeper, S. D., administration Building, Balboa Heights.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Certificate.

By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

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OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Volume XV.

Balboa Heights, C. Z., March 1, 1922.

No. 29.

CANAL WORK IN JANUARY.

The following is the report of the Acting Governor to the Secretary of War, of Canal work in the month of January, 1922:

BALBOA HEIGHTS, C. Z., February 18, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of January, 1922:

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal during the month of January, 1922, as compared with the preceding month and with the corresponding month of last year, was as follows:

	January, 1922.	December, 1921.	January, 1921.
Commercial vessels.....	210	239	279
Noncommercial vessels.....	22	35	74
Lanterns, etc. (under 10 tons measurement).....	6	4	1
Total vessels and craft through Canal.....	238	278	354

In addition to the foregoing, Panama Canal equipment consisting of floating cranes, barges, craneboats, graders, etc., was passed through the locks as follows: Gatun, 20; Pedro Miguel, 52; Miraflores, 46.

COMMERCIAL TRAFFIC.*

Tolls.

Under the present dual method of assessing tolls, the revenue from this source was \$847,767.55. Had the net tonnage as determined by The Panama Canal rules of measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$157,927.83. These additional tolls would have been contributed by nationality of vessels as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$37,879.60	\$14,206.90	\$52,086.50
Chilean.....	2,703.65	2,699.00	5,402.65
Danish.....		406.70	406.70
Dutch.....	4,123.95	1,365.80	5,489.75
French.....		439.70	439.70
German.....	1,831.80	885.05	2,716.85
Italian.....	1,481.30	447.55	1,928.85
Japanese.....	2,239.25	1,515.70	3,754.95
Norwegian.....	1,997.40	116.30	2,113.70
Panamanian.....		2.07	2.07
Peruvian.....	3,016.90	3,016.90	6,033.80
Swedish.....	108.65		108.65
United States.....	41,392.00	36,055.80	77,447.80
Totals.....	96,774.50	61,153.33	157,927.83

* Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial."

* Gain.

The additional tolls paid by United States vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$25,912.85	\$23,238.40	\$49,151.25
United States and Canal Zone ports.....	774.70	528.10	1,302.80
United States and foreign ports.....	13,129.10	12,289.30	25,418.40
Between foreign ports.....	1,575.35		1,575.35
Totals.....	41,392.00	36,055.80	77,447.80

Of the above \$157,927.83 additional revenue that would have been collected by using The Panama Canal rules exclusively, \$6,759.60 represents the additional tolls that would have been collected on account of deck cargo.

COMPARATIVE TRAFFIC STATISTICS.

The following tabulations permit a ready comparison of commercial traffic through the Canal in January, 1922, with that of the preceding months, along the lines indicated at the head of the various tables:

TONNAGE, TOLLS, AND CARGO CARRIED.

	January, 1922.	December, 1921.	January, 1921.	Average month for past year.
United States equivalent net tonnage.....	689,035	827,340	894,689	768,671
Panama Canal net tonnage.....	846,516	1,017,244	1,094,323	944,394
Registered gross tonnage.....	1,069,840	1,284,499	1,383,778	1,193,974
Registered net tonnage.....	691,648	820,431	883,362	762,859
Tolls.....	\$847,767.55	\$1,003,598.27	\$1,095,857.47	\$931,451.26
Cargo.....	807,298	953,053	1,177,053	885,716

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.10	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,724.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134
January, 1922.....	28	138,923	141,404.35	119,413	20	108,921	111,440.00	86,862

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,706.25	29,918	12	60,894	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,503	14	61,980	62,318.75	79,129
November.....	12	74,035	71,525.74	44,976	5	20,949	29,127.50	28,805
December.....	9	47,904	46,318.75	44,101	6	32,957	32,803.75	28,784
January, 1922.....	6	34,546	34,756.25	23,575	7	31,550	30,046.95	28,831

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED PER VESSEL.

	January, 1922.	December, 1921.	January, 1921.
United States equivalent net tonnage	3,281	3,461	3,207
Panama Canal net tonnage	4,031	4,256	3,922
Registered gross tonnage	5,095	5,378	4,960
Registered net tonnage	3,294	3,432	3,166
Tolls	\$4,036.99	\$4,199.15	\$3,927.80
Tons of cargo (all vessels)	3,844	3,987	3,859
Tons of cargo (laden vessels only)	4,160	4,412	4,746

COMMODITY STATISTICS.

A classification of cargo passing through the Canal during the month of January, 1922, has been compiled from declarations of cargo submitted by the ships' masters, and while incomplete, is indicative of the kind and quantity of the various commodities carried by ships transiting the Canal. From the cargo declarations and manifests submitted, it was possible to classify by commodities 73.7 per cent of all cargo passing from the Atlantic to the Pacific, and 91 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith:

Commodity.	January, 1922.	December, 1921.	November, 1921.	October, 1921.	September, 1921.
Atlantic to Pacific.					
Oil:					
Crude	65,862	48,272	30,144	68,891	17,981
Refined	28,407	46,970	47,944	25,840	19,781
Other	6,230	1,918	3,113	1,121	2,088
Manufactured goods:					
Iron and steel	78,020	81,168	65,071	48,074	50,488
Machinery, railroad material, textiles	38,689	24,120	23,927	14,659	19,331
Coal and coke	37,587	46,462	52,850	21,512	16,040
Cotton, raw	8,793	37,614	20,807	14,725	19,207
Metals	10,992	22,007	10,052	8,880	8,467
Ammonia	10,767	11,592	7,447	12,072	4,749
Cement	2,675	10,809	5,233	2,681	1,834
Paper	2,569	5,077	2,900	2,813	1,210
Sulphur	18,025	4,000	2,500		11,551
Tobacco	1,831	3,086	2,075	2,879	2,452
Other and general	183,144	174,015	112,618	150,290	125,541
Totals	493,591	517,110	386,681	374,437	300,720
Pacific to Atlantic.					
Nitrate	46,716	59,957	39,523	54,256	22,758
Manufactured goods—Iron, steel, etc.	2,369	2,550	265	1,053	556
Wheat	29,333	35,127	110,831	128,375	75,486
Lumber	57,347	42,610	50,564	56,605	26,750
Barley	8,462	21,781	37,989	67,092	107,831
Oils:					
Crude		4,723	26,617	670	4,820
Refined	42	16,165	10,169	9,713	18,278
Other	1,958	14,469	761	1,581	1,545
Canned goods:					
Fish	9,246	5,202	13,767	32,761	17,232
Fruit	11,729	15,982	19,808	25,547	35,427
Vegetables, milk	890	1,660	1,470	2,523	4,302
Ores	10,647	9,805	13,218	3,824	6,433
Metals	14,234	10,959	14,515	11,078	10,516
Fruit, fresh and dried	8,697	3,876	13,060	4,162	6,664
Sugar	12,679	29,879	11,210	20,261	6,657
Beans, peas, lentils	5,088	5,351	9,270	20,547	6,774
Flour	1,017	8,881	8,799	19,000	15,101
Phosphates	7,930	8,900	7,300	14,057	
Cold storage—meats	5,786	13,809	4,920	18,739	10,600
Cotton	4,238	6,660	4,886	12,592	5,392
Rice	1,621	6,401	4,678	4,054	7,205
Wool	16,024	5,555	4,349	9,081	5,522
Coffee	3,775	4,529	3,785	4,594	6,013
Ivory nuts	2,717	2,482	3,012	2,811	3,164
Cacao	3,917	4,745	2,862	3,844	4,327
Tea	410	1,394	1,983	3,950	546
Other and general	46,835	92,491	49,148	78,567	44,275
Totals	313,707	435,943	468,759	611,338	454,174

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate of such tolls per cargo ton varies in different ships as the ratio of cargo tonnage to the net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of January, 1922, by nationality of vessels:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.07	\$1.02	\$1.05
Chilean.....	1.57	4.61	2.15
Danish.....	.85	1.71	1.12
Dutch.....	1.08	.84	.96
French.....	10.98	.72	2.13
German.....	1.51	.53	.92
Italian.....	5.72	.83	1.88
Japanese.....	.78	.88	.83
Norwegian.....	.69	6.89	1.04
Peruvian.....	7.57	.82	1.47
Swedish.....	.70	.....	.70
United States.....	1.01	1.11	1.05
Average rate all ships, January, 1922.....	1.04	1.06	1.05
Average rate all ships, December, 1921.....	1.10	.99	1.05
Average rate all ships, November, 1921.....	1.19	.81	.98

ORIGIN AND DESTINATION OF TONNAGE.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past 14 months, the figures representing the Panama Canal net tonnage:

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscel- laneous.	Total.
December, 1920.....	332,418	128,739	53,070	36,097	4,608	554,932
January, 1921.....	284,111	129,939	60,564	21,373	21,732	517,719
February.....	268,727	75,532	55,859	18,844	16,271	435,233
March.....	291,937	188,548	85,275	20,731	27,100	613,591
April.....	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,660
January, 1922.....	279,870	153,315	30,271	18,398	31,910	513,764
Average month.....	273,884	148,012	37,886	22,079	22,728	504,589

DESTINATION OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
December, 1920.....	91,063	248,176	99,594	84,168	31,031	554,932
January, 1921.....	163,295	170,861	56,082	94,583	32,898	517,719
February.....	119,271	168,604	66,958	62,507	17,593	435,233
March.....	139,889	146,075	118,053	153,910	55,064	613,591
April.....	141,584	135,622	131,637	84,155	19,693	492,506
May.....	125,091	103,143	82,490	82,582	21,114	414,429
June.....	143,217	106,369	83,063	46,208	36,355	415,302
July.....	164,354	45,391	63,969	58,062	41,271	403,051
August.....	164,577	196,885	94,486	70,551	50,710	487,219
September.....	203,758	99,105	80,242	53,399	38,220	530,634
October.....	289,483	78,522	109,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,515	115,589	136,949	84,391	49,743	575,660
January, 1922.....	170,927	112,160	109,878	83,526	46,273	513,764
Average month.....	172,099	124,595	93,568	77,542	37,475	504,589

ORIGIN OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
December, 1920.....	145,192	239,389	11,146	58,175	19,084	472,986
January, 1921.....	151,034	230,437	26,843	115,206	53,084	576,604
February.....	173,815	226,242	22,473	34,616	24,459	481,605
March.....	163,294	203,002	28,525	62,652	41,754	499,227
April.....	139,495	168,585	29,756	85,560	38,601	462,997
May.....	174,128	137,258	12,407	81,086	45,309	450,188
June.....	116,521	112,474	18,740	75,400	23,040	346,175
July.....	174,412	99,745	41,084	70,124	22,197	407,562
August.....	229,629	110,248	20,628	68,661	48,894	478,067
September.....	218,453	84,212	14,762	30,814	46,262	394,503
October.....	252,645	124,560	37,720	41,436	42,018	498,379
November.....	189,942	126,381	23,556	6,581	56,934	403,394
December.....	195,969	135,952	28,194	39,616	41,844	441,575
January, 1922.....	152,992	100,224	16,860	27,172	35,504	332,752
Average month.....	176,838	149,908	23,764	56,935	38,499	446,144

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscel- laneous.	Total.
December, 1920.....	198,618	157,070	69,008	34,099	14,191	472,986
January, 1921.....	293,836	188,133	49,947	23,295	21,393	576,604
February.....	175,324	163,690	74,363	18,056	50,174	481,605
March.....	190,683	189,793	83,700	21,228	13,823	499,227
April.....	189,209	197,311	53,334	22,043	1,100	462,997
May.....	201,548	140,940	73,705	21,549	12,446	450,188
June.....	155,147	136,292	18,324	26,112	10,300	346,175
July.....	205,690	134,047	23,123	28,770	15,932	407,562
August.....	231,830	194,279	27,256	22,022	2,670	478,067
September.....	204,820	140,555	26,478	17,114	5,536	394,503
October.....	259,613	170,189	18,222	30,955	19,400	498,379
November.....	196,974	164,345	20,446	16,760	4,869	403,394
December.....	191,277	192,575	25,550	21,739	10,434	441,575
January, 1922.....	115,392	168,337	26,831	16,489	5,703	332,752
Average month.....	200,712	166,968	42,163	22,874	13,427	446,144

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of January, 1922, of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year:

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe.....		42.5	3.6	
East coast of United States.....	1.0		2.2	
East coast of Mexico.....		36.5		20.1
Cristobal, C. Z.....		27.6		16.7
West coast of United States.....		0.6		13.5
West coast of South America.....		9.5		33.1
Australasia.....	7.7			52.2
Far East.....	6.7			29.0

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for the month of January, 1922, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of February 15, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes for the month of January, 1922, for the preceding month, and for the corresponding month of last year:

THE PANAMA CANAL RECORD

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	January, 1922.	December, 1921.	January, 1921.	January, 1922.	December, 1921.	January, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	28	20	17	20	23	16
United States and Far East.....	15	27	12	2	5	6
Europe and United States.....	7	15	7	7	12	15
United States and South America.....	11	10	23	9	10	25
Europe and South America.....	12	12	12	11	19	24
Cristobal and South America.....	10	9	11	10	9	10
Europe and Australasia.....	10	8	5	4	5	14
United States and Australasia.....	4	5	12	2	1	3
Europe and Canada.....	4	4	3	4	2	4
Mexico and United States.....		1	3	1	2	1
Mexico and South America.....	4	2	7	3	1	6
Miscellaneous.....	20	22	22	12	15	21
Totals.....	125	135	134	85	104	145
	Panama Canal net tonnage.			Panama Canal net tonnage.		
	January, 1922.	December, 1921.	January, 1921.	January, 1922.	December, 1921.	January, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	138,928	104,152	88,086	108,921	116,482	62,765
United States and Far East.....	81,449	127,353	51,263	10,475	24,572	26,843
Europe and United States.....	28,243	63,732	37,549	31,964	62,655	77,381
United States and South America.....	32,227	38,745	69,204	29,283	33,707	70,513
Europe and South America.....	45,525	49,830	47,599	42,789	85,435	96,358
Cristobal and South America.....	13,936	10,947	15,846	12,749	11,759	14,378
Europe and Australasia.....	57,000	56,151	30,946	18,560	31,395	101,145
United States and Australasia.....	22,366	22,746	63,637	8,612	4,127	14,061
Europe and Canada.....	18,615	20,914	12,927	22,079	10,431	18,952
Mexico and United States.....		4,903	15,748	5,043	13,033	5,234
Mexico and South America.....	20,472	10,362	34,331	15,403	5,051	27,795
Miscellaneous.....	55,003	65,834	50,583	26,874	42,928	61,179
Totals.....	513,764	575,669	517,719	332,752	441,575	576,604
	Tons of cargo carried.			Tons of cargo carried.		
	January, 1922.	December, 1921.	January, 1921.	January, 1922.	December, 1921.	January, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	119,413	73,967	76,593	86,862	105,134	81,336
United States and Far East.....	121,939	194,595	82,248	14,845	28,182	25,039
Europe and United States.....	20,877	31,004	15,292	48,186	91,812	106,140
United States and South America.....	16,702	13,313	96,171	30,848	31,659	81,531
Europe and South America.....	17,912	28,989	28,081	53,813	109,202	143,845
Cristobal and South America.....	2,258	2,089	7,744	6,194	7,436	5,742
Europe and Australasia.....	46,096	40,269	26,715	20,279	32,981	88,358
United States and Australasia.....	22,634	27,430	78,221	8,800	1,347	22,399
Europe and Canada.....	15,872	17,233	5,075	26,395	11,916	26,360
Mexico and United States.....		11,000	29,000			
Mexico and South America.....	37,152	18,500	61,930			
Miscellaneous.....	72,736	58,721	50,088	17,485	16,274	39,145
Totals.....	493,591	517,110	557,158	313,707	435,943	619,895

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships, and other noncargo-carrying vessels, are shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	4	14,586	\$10,501.92	1	5,311	\$3,823.92
Danish.....	1	180	129.60	2	2,238	1,611.36
Japanese.....				1	6,385	4,597.20
Norwegian.....				2	10,094	7,267.68
Panamanian.....				1	69	51.75
United States.....	1	350	252.00	1	5,041	3,629.52
Totals.....	6	15,116	10,883.52	8	29,138	20,981.43

LATIN-AMERICAN TRAFFIC.

The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality:

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	23	53,910	67,838	89,625	55,793	\$65,387 58	61,070
Chilean.....	3	4,703	7,152	8,883	5,331	5,878 75	3,750
Danish.....	1	167	180	360	170	129 60	.....
Dutch.....	1	2,290	3,660	3,689	2,291	2,862 50	685
French.....	1	4,288	4,409	5,564	3,524	5,290 80	175
German.....	2	4,764	6,489	7,856	4,778	5,955 00	3,946
Italian.....	2	5,822	7,299	10,044	5,836	7,277 50	1,273
Japanese.....	3	12,361	13,087	17,504	12,082	15,195 45	17,699
Norwegian.....	3	8,216	9,467	11,992	7,591	10,157 75	14,316
Peruvian.....	2	2,710	5,337	9,147	4,763	3,387 50	480
Swedish.....	1	1,091	1,227	1,825	1,282	1,363 75	1,943
United States.....	11	25,271	31,775	39,748	25,477	31,362 35	33,303
Totals, January, 1922.....	53	125,593	157,920	206,237	128,918	154,248 53	138,640
Totals, December, 1921.....	52	131,175	164,366	213,863	133,282	156,141 99	119,860
Totals, January, 1921.....	75	181,708	224,467	285,838	177,278	.....	266,102

PACIFIC TO ATLANTIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo. ¹
		United States equivalent.	Panama Canal net.	Registered			
				Gross.	Net.		
British.....	16	35,881	44,685	61,502	36,818	\$42,847 82	40,554
Chilean.....	2	3,260	5,645	6,367	3,888	4,075 00	883
Danish.....	2	1,828	2,238	2,991	1,852	1,611 36	
Dutch.....	1	4,085	4,393	4,368	2,726	5,106 25	6,815
French.....	1	3,566	4,081	5,681	3,600	4,457 50	6,127
German.....	1	2,531	3,374	4,174	2,584	3,163 75	5,900
Italian.....	1	3,097	3,599	5,376	3,082	3,871 25	4,630
Japanese.....	1	5,513	6,385	9,049	6,502	4,597 20	
Norwegian.....	2	5,273	6,050	8,428	5,313	4,719 22	1,212
Panaman.....	1	69	69	123	72	51 75	
Peruvian.....	2	2,710	5,337	9,147	4,763	3,387 50	4,119
United States.....	13	29,469	36,620	46,657	29,254	33,289 48	26,275
Totals, January, 1922.....	43	97,282	122,476	163,863	100,454	111,178 08	96,515
Totals, December, 1921.....	54	148,770	182,195	240,108	151,148	169,551 45	154,087
Totals, January, 1921.....	87	225,140	275,457	357,515	224,698		270,263

CLASSIFICATION OF COMMERCIAL TRAFFIC.

A statement of this month's commercial traffic, classified by nationality of vessels, is shown in the following tabulations:

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States. equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific.							
British.....	50	166,297	205,602	260,784	166,311	\$204,874.72	191,249
Chilean.....	3	4,703	7,152	8,883	5,331	5,878.75	3,750
Danish.....	2	3,388	3,469	4,261	3,499	4,076.40	4,800
Dutch.....	3	9,945	13,796	15,772	9,954	12,431.25	11,482
French.....	2	8,771	8,924	10,295	6,436	10,708.80	975

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered			
				Gross.	Net.		
From Atlantic to Pacific—Contd.							
German	2	4,764	6,489	7,856	4,778	\$5,955 00	3,946
Italian	2	5,822	7,299	10,044	5,836	7,277 50	1,273
Japanese	7	29,633	32,302	43,523	28,708	36,604 75	46,694
Norwegian	4	11,353	13,397	17,120	10,720	14,079 00	20,366
Peruvian	2	2,710	5,337	9,147	4,763	3,387 50	480
Swedish	1	1,091	1,227	1,825	1,282	1,363 75	1,943
United States	47	168,050	208,770	256,861	172,801	209,619 20	206,633
Totals	125	416,527	513,764	646,371	420,419	516,256 62	493,591
From Pacific to Atlantic.							
British	25	70,052	85,100	113,535	69,206	87,497 92	86,044
Chilean	2	3,260	5,645	6,367	3,888	4,075 00	883
Danish	3	3,582	4,494	5,916	3,600	3,803 86	2,218
Dutch	2	8,948	10,459	12,023	7,525	11,185 00	13,191
French	1	3,566	4,081	5,681	3,600	4,457 50	6,127
German	1	2,531	3,374	4,174	2,584	3,163 75	5,900
Italian	1	3,097	3,599	5,376	3,082	3,871 25	4,630
Japanese	6	27,419	30,016	40,145	27,897	31,649 90	35,735
Norwegian	3	9,691	11,093	15,415	9,735	8,350 18	1,211
Panaman	1	69	69	123	72	51 75	.....
Peruvian	2	2,710	5,337	9,147	4,763	3,387 50	4,119
United States	38	137,583	169,575	205,567	135,277	170,017 32	153,649
Totals	85	272,508	332,752	423,469	271,229	331,510 93	313,707
Combined traffic both ways.							
British	75	236,349	290,702	374,319	235,517	292,372 64	277,293
Chilean	5	7,963	12,797	15,250	9,219	9,953 75	4,633
Danish	5	6,970	7,873	10,177	7,099	7,880 26	7,018
Dutch	5	18,893	24,255	27,795	17,479	23,616 25	24,673
French	3	12,337	13,005	15,976	10,036	15,166 30	7,102
German	3	7,295	9,863	12,030	7,362	9,118 75	9,846
Italian	3	8,919	10,898	15,420	8,918	11,148 75	5,903
Japanese	13	57,052	62,318	83,668	56,605	68,254 65	82,429
Norwegian	7	21,044	24,490	32,535	20,455	22,429 18	21,577
Panaman	1	69	69	123	72	51 75	.....
Peruvian	4	5,420	10,674	18,294	9,526	6,775 00	4,599
Swedish	1	1,091	1,227	1,825	1,282	1,363 75	1,943
United States	85	305,633	378,345	462,428	308,078	379,636 52	360,282
Totals	210	689,035	846,516	1,069,840	691,648	847,767 55	807,298

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	118	498,648	\$503,073.10	76	303,614	\$308,471.00
Ballast.....	6	15,116	10,883.52	8	29,138	20,981.43
Cruisers.....	1	(¹)	2,300.00	1	(¹)	2,058.50
Totals.....	125	513,764	516,256.62	85	332,752	331,510.93
Steamships:						
Motor ships.....	117	500,929	500,559.52	75	314,351	311,643.66
Motor ships.....	2	7,311	6,790.00	3	11,766	12,248.75
Motor schooners.....	2	144	157.50	3	213	209.25
Auxiliary schooners.....	2	2,091	2,502.80	.....	.....	.....
Auxiliary barks.....	1	3,289	3,946.80	2	1,381	1,721.25
Tanker.....	.....	.....	.....	1	5,041	3,629.52
Cruisers.....	1	(¹)	2,300.00	1	(²)	2,058.50
Totals.....	125	513,764	516,256.62	85	332,752	331,510.93

¹ Displacement tonnage, 4,600.

² Displacement tonnage, 4,117.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Canal free of tolls. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Canal; these are not included in the commercial traffic:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels:						
Colliers.....	2	38,300	\$19,150.00			
Cruiser.....	1	3,200	1,600.00	1	3,200	\$1,600.00
Gunboat.....	1	1,443	721.50	1	1,575	787.50
Transport.....	1	5,212	6,254.40			
Tugs.....	4	3,500	1,750.00	3	2,750	1,375.00
Patrol yacht.....				1	2,600	1,300.00
Repair ship.....				1	3,380	1,690.00
United States Army vessels:						
Transports.....	3	12,678	15,213.60			
Mine planter.....				1	46	55.20
Commercial vessel for repairs.....	1	1,633	1,959.60			
Completing passage.....	1	2,143				
Launches.....	4	14	14.60	2	5	1.50

* Indicates displacement tonnage.

Cargo through the Canal free of tolls:

Atlantic to Pacific..... tons.. 33,495

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of January, 1922, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving..... tons..	32,291	11,183	43,474
Local cargo shipped..... tons..	1,996	355	2,351
Transit cargo arriving..... tons..	842,970	841,245	1,684,215
Transit cargo clearing..... tons..	836,614	841,750	1,678,364
Cargo received for transshipment..... tons..	22,147	236	22,383
Cargo transhipped..... tons..	22,840	263	23,103
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received..... tons..	33,887	3,270	37,157
Dispatched..... tons..	20,985	661	21,646
Rehandled..... tons..	1,084		1,084
Stevedored..... tons..	24,277	1,361	25,638
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	58	4	62
Panama Railroad vessels.....	9		9
United States Army vessels.....	3	2	5
Total vessels supplied with bunker coal.....	70	6	76
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	16,268	222	16,490
Panama Railroad vessels..... tons..	1,415		1,415
United States Army vessels..... tons..	870	55	925
Total coal supplied to vessels..... tons..	18,553	277	18,830
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	457	298	755
Panama Railroad, excepting vessels..... tons..	12	40	52
United States Army, excepting vessels..... tons..	205	305	510
Individuals and companies..... tons..	269	78	347
Total issues from Panama Canal deposits.....	943	721	1,664
January, 1922..... tons..	19,496	993	20,489
December, 1921..... tons..	25,049	214	25,416
January, 1921..... tons..	44,139	6,770	50,909

		Cristobal.	Balboa.	Total.
Coal on hand, February 1, 1922.....	tons.	154,793	28,906	183,699
Coal on hand, January 1, 1922.....	tons.	164,663	29,899	194,562
Coal received during January.....	tons.	9,626		9,626
<i>United States Navy coal account.</i>				
Issued to United States Navy, including vessels.....	tons.	1,863	1,544	3,407
Coal on hand, February 1, 1922.....	tons.	61,949	17,014	78,963
Coal on hand, January 1, 1922.....	tons.	63,812	18,558	82,370
Fuel oil issues:				
Panama Canal departments.....	bbls.	4,845	13,460	18,305
Army and Navy.....	bbls.	721	4,178	4,899
Individuals and companies.....	bbls.		25	25
Total issues and sales.....	bbls.	5,556	17,663	23,229
Fuel oil on hand, February 1, 1922.....	bbls.	50,227	69,211	119,438
Fuel oil on hand, January 1, 1922.....	bbls.	55,793	70,460	126,253
Received during January, 1922.....	bbls.		16,414	16,414
Diesel oil issued during January, 1922.....	bbls.	159	39	198
Diesel oil on hand, February 1, 1922.....	bbls.	50,797	915	51,712
Diesel oil on hand, January 1, 1922.....	bbls.	50,956	954	51,910
Oil pumped for individuals and companies.....	bbls.	314,831	91,901	406,732
Miscellaneous transfers.....	bbls.	5,642	497	6,139
Total oil handled.....	bbls.	326,198	126,414	452,612
Admeasurement certificates:				
United States equivalent issued or made.....		27	7	34
Measured for P. C. net tonnage.....		12	8	20
United States equivalent or P. C. net tonnage corrected.....		25	25	50
Services of harbor equipment:				
Tugs, total operating hours.....		416	254	670
Launches, total operating hours.....		1,085	969	2,054
Vessels repaired at Panama Canal shops:				
Commercial.....		28	8	36
United States Government.....		14	9	23
Canal equipment.....		4	26	30
Vessels dry-docked:				
Commercial.....		3	2	5
United States Government.....		1		1
Canal equipment.....		2	9	11
Clearances issued.....		125	137	262
Bills of health issued.....		119	137	256

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal:

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
Ships entering.						
All vessels, including those transiting the Canal	267	1,397,928	891,614	224	1,154,221	802,644
Vessels entering port but not transiting the Canal	54	268,243	161,752	7	31,130	19,525
Vessels transiting Canal and handling passengers or cargo	48	214,882	127,935	43	163,431	93,505
Ships clearing.						
All vessels, including those transiting the Canal	261	1,375,558	979,108	223	1,149,692	798,972
Vessels entering port but not transiting the Canal	48	246,360	150,612	7	27,445	17,240
Vessels transiting Canal and handling passengers or cargo	49	221,318	131,953	42	162,977	92,948

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of January, 1922:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to—						
U. S. Government vessels..	\$169.80	\$675.12	\$8.76		\$99.99	\$953.67
Panama Railroad vessels..	61.20	3,649.12	702.92		300.33	4,713.57
Other commercial vessels..	1,348.51	11,234.00	2,393.86		568.23	15,544.60
Totals, January, 1922	1,579.51	15,558.24	3,105.54		968.55	21,211.84
Totals, December, 1921	1,420.53	5,499.03	24,558.73		1,676.38	33,154.67
Totals, January, 1921.	2,820.35	13,953.64	62,166.27	\$5,531.22	5,512.53	89,984.01
Sales at Balboa to—						
U. S. Government vessels..	94.30	3,804.02	8,266.76	69.30	951.03	13,185.41
Other commercial vessels..	380.10	278.14	4,053.31		373.59	5,085.14
Totals, January, 1922	474.40	4,082.16	12,320.07	69.30	1,324.62	18,270.55
Totals, December, 1921	349.74	3,815.83	15,697.89	2,319.83	367.94	20,321.40
Totals, January, 1921.	2,142.10	28,250.43	64,022.42	527.72	4,124.49	99,067.16

MOVEMENT OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of January, 1922:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.....	970	716	1,686	7	6	13
From Pacific ports.....	114	33	147	138	157	295
Total disembarking.....	1,084	749	1,833	145	163	308
Embarking:						
For Atlantic ports.....	790	457	1,247			
For Pacific ports.....	224	69	293	174	129	303
Total embarking.....	1,014	526	1,540	174	129	303
Remaining on board vessels:						
From Atlantic to Pacific ports	870	1,519	2,389	1,001	1,579	2,580
From Pacific to Atlantic ports	168	66	234	279	102	381
From Atlantic to Atlantic ports	657	54	711			
From Pacific to Pacific ports				45	371	416
Total remaining on board.....	1,695	1,639	3,334	1,325	2,052	3,377
Total passengers arriving.....	2,779	2,388	5,167	1,479	2,206	3,685
Total passengers departing.....	2,709	2,165	4,874	1,487	2,024	3,511

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of January, 1922, as compared with that of the preceding month and of the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun	84	117	201	8	10	18	219
Pedro Miguel	82	121	203	19	17	36	239
Miraflores	80	113	193	17	15	32	225
Total lockages, January, 1922	246	351	597	44	42	86	683
Total lockages, December, 1921	303	378	681	51	41	92	773
Total lockages, January, 1921	313	334	647			54	701

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun	89	130	219	22	27	49	268
Pedro Miguel	87	127	214	36	40	76	290
Miraflores	87	127	214	34	38	72	286
Total vessels, January, 1922	263	384	647	92	105	197	844
Total vessels, December, 1921	318	410	728	140	111	251	979
Total vessels, January, 1921	392	413	805			99	904

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels	29	24	26
Canal equipment	20	52	46
Total noncommercial vessels	49	76	72

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
Lockages	841,680,000	861,000,000	692,060,000
Leakage	20,000,000	16,770,000	67,000,000
Maintenance			1,090,000
Total consumption, January, 1922	861,680,000	877,770,000	760,150,000
Total consumption, December, 1921	984,180,000	969,810,000	884,760,000
Total consumption, January, 1921	1,252,860,000	1,219,650,000	1,048,270,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorologic and hydrographic conditions over the Canal Zone and vicinity during the month of January, 1922, are shown in comparative form:

Rainfall.	January, 1922.	January, 1921.	January—Years of record.		
			Maximum.	Minimum.	Mean.
	Inches.	Inches.	Inches.	Inches.	Inches.
Total for month:					
Pacific Section	2.46	0.54	3.13	0.01	1.16
Central Section	5.01	.75	5.01	.18	1.61
Atlantic Section	9.48	3.36	12.61	.62	4.16
Maximum recorded on any one day	3.62	1.80	10.86		
Gatun Lake watershed	5.86	2.52	5.86	.52	2.10
Chagres River watershed above Alhajuela	6.92	1.71	12.10	.38	3.19
Maximum recorded for month at any one point	11.26	6.74	22.32		
Minimum recorded for month at any one point	1.24	.02			

* This represents the maximum 24-hour rainfall recorded on the Isthmus since American occupation; recorded at Porto Bello on December 28-29, 1909.

Rainfall.	January, 1922.	January, 1921.	January—Years of record.		
			Maximum.	Minimum.	Mean.
<i>Hydrography.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	4,339	1,006	5,050	682	2,067
Maximum momentary discharge for month.....	29,100	2,475	170,000		
Gatun Lake watershed total yield.....	9,298	2,093	9,298	1,371	3,118
Gatun Lake watershed net yield.....	8,641	1,216	8,641	769	2,438
Draft on Gatun Lake for lockages and power.....	2,001	2,506	2,506	987	1,826

* This figure represents the maximum momentary discharge on record; occurred on December 26, 1909.

SEISMOLOGY.

Seismic tremors were recorded on the 1st, 2d, 6th, 8th, 9th, 10th, 16th, and 31st. Those of the 1st, 2d, 8th, 9th, and 10th were all local shocks with epicenter probably to the southwest. The disturbance of the 6th was about 1,900 miles distant and gave indications of being to the northwest. The disturbance of the 16th was about 450 miles distant and, judging from the record on the seismograms, was extremely violent at the point of origin, which was probably in the Pacific Ocean. Slight tremors were recorded on the 31st from a distant disturbance that newspaper reports indicate was off the coast of Oregon and which was generally felt in the Pacific coast States. No damage to Canal works occurred during the month from any of the disturbances recorded.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., are shown in the following tabulations:

	January, 1922.	December, 1921.	January, 1921.
Gross output, KWH:			
Gatun hydroelectric station.....	4,811,800	4,942,900	6,285,900
Miraflores steam plant.....	280	300	57,340
Combined gross output.....	4,812,080	4,943,200	6,343,240
Water consumption..... cubic feet.	3,657,240,000	3,779,696,146	4,383,193,500
Oil consumption..... barrels.	1,881	1,882	2,542
Power distributed to consumers..... KWH.	4,122,618	4,235,893	5,348,844
Loss of power in plant auxiliaries, transmission and trans- formation..... KWH.	689,462	707,307	994,396
Per cent of loss of power to gross output.....	14.32	14.3	15.67

Miscellaneous electrical repairs and installations of electrical equipment were made on 31 vessels during the month. There were 375 work orders issued for work to be performed by the Electrical Division during the month, as compared with 358 for the month of December, 1921. Work covering the installation of switching and other electrical equipment for the proposed fifth generating unit at the hydroelectric station was completed during the month.

SHOP, FOUNDRY, AND DRY DOCK WORK.

The output of the Mechanical Division in patterns and castings for January, 1922, as compared with the preceding month, was as follows:

	January, 1922.			December, 1921.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	5	57	9,943	2	175	8,612
Steel.....		100	13,715	1		
Brass.....		120	2,862	10	60	1,392

During the month miscellaneous repairs were made on 46 vessels at Cristobal, and 43 at the Balboa shops. Of the above vessels, 6 were placed in dry dock at Cristobal and 11 at Balboa.

Extensive heavy running repairs, docking, cleaning, and painting was performed on the steamship *Albertolie*.

The steamship *Delft* arrived in port at Balboa with the main injection valve broken. By utilizing the services of the diver and installing temporary patch over the strainer, repairs were made and the vessel was permitted to proceed on her way in about half the time anticipated by the ship's owners.

Dry-docking and overhaul of the Dredging Division fleet continued during the month.

The work of rebuilding and converting the tug *Mariner* into an oil burner was carried forward during the month and very satisfactory progress was made.

DREDGING DIVISION.

Cucaracha and Barge Repair slides have shown no perceptible movement during the month. West Culebra slide, during the first part of the month, continued to show a general movement, between stations 1774-00 and 1795-00, but shows no movement at this date. No inconvenience to Canal traffic was occasioned by reason of slides during the month.

The total excavation for the month of January, 1922, including earth and rock, was 285,750 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment
	Earth.	Rock.			
89,600	23,300	66,300	Maintenance.....	Gaillard Cut, West Culebra. 1774-00 to 1795-00 C. L. and W.	Paraiso.
23,900	9,300	14,600	Maintenance.....	Gaillard Cut, East Culebra. 1774-00 to 1795-00 C. L. and E.	Paraiso.
1,750	850	900	Maintenance.....	Gaillard Cut, East Barge Repair. 1754-00 to 1756-50 E.	Paraiso.
19,000	7,000	12,000	Maintenance.....	Pacific Entrance. 2160-00 to 2180-00 E.	Cascadas.
3,000		3,000	Construction.....	Pacific Entrance. 2160-00 to 2180-00 E.	Cascadas.
131,000	131,000		Maintenance.....	Pacific Entrance. 2251-60 to 2316-00 W.	No. 84.
17,500	6,500	11,000	Maintenance.....	Balboa Inner Harbor.	Cascadas.
285,750	177,950	107,800			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	115,250
Dumped at sea.....	39,500
Dumped on flats west of Canal.....	131,000
Total.....	285,750

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	January, 1922.	December, 1921.	January, 1921.
	Gallons.	Gallons.	Gallons.
Pumping stations.....	663,058,500	663,173,000	863,708,750
Filtration plants.....	392,676,000	391,375,000	538,978,000
Water consumed by Panama City.....	85,076,000	90,888,000	93,624,000
Water consumed by Colon.....	52,321,500	42,337,000	59,478,550
Sales of water to vessels.....	10,249,580	10,993,100	19,156,147

Construction work, as itemized below, was under progress during the month, with completion on December 31 and January 31, as shown:

	Per cent completed.	
	Dec. 31.	Jan. 31.
Fill, France Field.....	99.5	99.5
Grading of Silver City, Mount Hope.....	92	95
Construction of landing field at Naval Air Station, Coco Solo.....	2	50
Seawall and dry fill, Coco Solo.....		12
Construction of new concrete seawall, New Santo Tomas Hospital.....	98	98.5
Extension of roads, New Santo Tomas Hospital.....	60	60
Foundation of wharve of Balboa.....	79	79
Extension of seawall, New Santo Tomas Hospital.....	55	75
Installation of electric duct line, New Santo Tomas Hospital.....	60	65

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	January 31, 1922.			Total occupants.		
	Men.	Women.	Children.	January, 1922.	December, 1921.	January, 1921.
Americans.....	2,335	1,897	2,126	6,358	6,600	8,409
Europeans.....	114	40	90	244	260	280
West Indians.....	4,649	2,511	5,537	12,697	12,723	11,503
Totals, January, 1922.....	7,098	4,448	7,753	19,299		
Totals, December, 1921.....	7,372	4,529	7,682		19,583	
Totals, January, 1921.....	8,513	4,500	7,179			20,192

WORKING FORCE.

The following tabulation shows the number of gold and silver employees as of January 18, 1922, by departments, together with a comparison of the working force for the preceding month and that of January, 1921:

	Employees as of January 18, 1922.		Total employees.		
	Gold.	Silver.	January, 1922.	December, 1921.	January, 1921.
Operation and Maintenance:					
Office.....	28	43	71	64	75
Electrical.....	145	149	294	304	479
Municipal Engineering.....	79	534	613	557	1,014
Lock Operation.....	190	663	853	877	787
Dredging.....	135	630	765	781	1,338
Mechanical.....	370	595	965	995	2,722
Marine.....	160	338	498	523	760
Fortifications.....	42	248	290	240	473
Totals.....	1,149	3,200	4,349	4,341	7,648
Supply Department:					
Transportation.....	37	146	183		
Quartermaster.....	132	821	953	1,243	2,447
Subsistence.....	19	219	238	244	454
Commissary.....	175	864	1,039	1,088	1,754
Cattle Industry—Plantations.....	12	348	360	179	436
Hotel Washington.....	8	77	85	90	102
Totals.....	383	2,475	2,858	2,844	5,193
Accounting Department.....	180	7	187	199	255
Health Department.....	217	732	949	949	1,125
Executive Department.....	492	244	736	756	823
Totals.....	889	983	1,872	1,904	2,203
Panama Railroad:					
Superintendent.....	47	247	294	285	586
Transportation.....	73	109	182	179	284
Receiving and Forwarding Agency.....	61	859	920	855	1,523
Coaling stations.....	89	450	539	519	1,532
Totals.....	270	1,665	1,935	1,838	3,925
Grand totals, January, 1922.....	2,691	8,323	11,014		
Grand totals, December, 1921.....	2,759	8,168		10,927	
Grand totals, January, 1921.....	4,145	14,824			18,969

* Includes 592 employees of former Building Division.

SCHOOLS.

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone for the month of January, 1922:

	White.	Colored.	Total.
Gross enrollment.....	1,936	1,661	3,597
Net enrollment.....	1,826	1,618	3,444
Average daily attendance.....	1,570.6	1,294.2	2,864.8
Pupils neither absent nor tardy.....	1,017	681	1,698
Number of cases of tardiness.....	261	51	312
Number of teachers.....	77	32	109

VITAL STATISTICS.

A total of 190 deaths occurred during the month of January, 1922, among the population of the Canal Zone, and the cities of Panama and Colon, which is equivalent to an annual death rate of 18.35 per 1,000. The 3 leading causes of death were tuberculosis, pneumonia, and diarrhea and enteritis; these 3 diseases caused 43 per cent of all deaths from disease.

There were 2 deaths from malaria, 1 from dysentery, and 1 from meningitis. Of the total deaths, 67, or 35 per cent, occurred among children under 5 years of age. There were 14 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 319 live births reported during the month, and 20 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 32.74 per thousand population. Deaths among children under 1 year of age numbered 41, giving an infant mortality rate, based on the number of births reported for January, of 128.53 per 1,000 live births. One hundred and twelve cases of malaria were reported during the month, of which 12 were employees and 100 were nonemployees. These malaria cases originated as follows: Panama, 8; in Colon, 4; in the Canal Zone, 69; and outside of the Canal Zone, 31.

Among other diseases reported during the month were 17 cases of measles, 12 of mumps, 3 of scarlet fever, 1 of typhoid fever, 15 of pneumonia, 5 of diphtheria, and 3 of dysentery.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month of January, 1922, sales to steamships from storehouses, and cash sales from stock, are shown below in comparative form:

	January, 1922.	December, 1921.	January, 1921.
Materials received on United States requisitions, chargeable as follows:			
Operation and Maintenance.....	\$76,817.53	\$111,827.15	\$959,774.78
Construction and equipment.....		787.06	15,677.89
Miscellaneous.....	861.65	4,925.88	12,627.67
Totals.....	77,679.18	117,540.03	988,080.34
Cash sales on the Isthmus:			
Stock.....	23,094.88	26,728.27	56,469.14
Fuel oil (including sales to ships).....	7,541.19	25.97	38,985.87
Scrap.....	173.77	923.41	464.68
Obsolete and second hand material.....	5,265.23	2,857.30	3,159.75
Totals.....	36,075.07	30,534.95	99,079.44
Sales to steamships from storehouses:			
Miscellaneous stock items.....	23,094.88	6,094.19	36,846.06
Fuel oil.....	7,541.19	25.97	17,875.15
Totals.....	30,636.07	6,120.16	54,721.21

FINANCIAL RECEIPTS AND EXPENDITURES.

	January, 1922.	December, 1921.	January, 1921.
Cash balance available for expenditure in Canal appropriations.....	\$11,064,761.27	\$11,866,501.01	\$13,424,285.71
Payments made from appropriations:			
By Paymaster on the Isthmus.....	945,193.78	955,330.79	1,678,098.54
By Distributing Clerk, Washington.....	71,160.53	171,583.21	1,103,379.84
To Panama Railroad (for commissary books).....	215,909.98	187,222.98	403,983.27

FINANCIAL RECEIPTS AND EXPENDITURES—continued.

	January, 1922.	December, — 1921.	January, 1921.
Collections on the Isthmus:			
Repaid to appropriations.....	\$594,956.23	\$535,261.14	\$1,250,116.95
Commissary and other trust funds.....	218,612.32	188,742.61	406,265.88
Tolls.....	847,783.65	1,003,604.42	1,094,327.76
Sales of water.....	29,337.40		16,160.95
Postal receipts.....	10,782.65	13,905.80	13,080.69
Licenses, taxes, court fees, etc.....	6,348.76	8,894.07	9,972.26
Total collections on Isthmus.....	1,707,821.01	1,750,408.04	2,789,924.49
Collections by Disbursing Clerk, Washington, D. C.....	6,276.88	13,941.69	248,636.05
Deposits made with assistant treasurer, United States.....	48,800.00	64,750.00	59,800.00
Canal Zone and miscellaneous funds:			
Receipts:			
Money order funds.....	110,781.34	114,179.68	197,044.93
Clubhouse funds.....	35,270.56	31,026.27	46,826.29
Trust funds.....	1,024.26	68.88	802.63
Interest.....	2,900.22	1,348.08	2,545.66
Total receipts.....	149,976.38	146,622.91	247,219.51
Disbursements:			
Money order funds.....	157,578.90	81,750.00	4,300.00
Clubhouse funds.....	31,690.03	28,069.94	48,139.40
Trust funds.....	738.78	592.54	1,503.51
Interest.....	516.77	603.51	420.41
Total disbursements.....	190,524.48	111,015.99	54,363.32
Pay roll on the Isthmus:			
Maintenance and operation.....	661,097.02	635,536.50	1,148,776.94
Sanitation.....	72,390.29	70,722.13	85,010.51
Civil government.....	67,916.07	67,752.91	66,097.89
Totals.....	801,403.38	774,011.54	1,299,885.34
Requisitions for purchases in the United States.....	221,693.59	42,052.73	300,061.45
Sales of commissary supplies:			
To The Panama Canal.....	79,773.30	96,423.00	136,986.97
To steamships, other than those of the United States Government and Panama Railroad.....	21,864.69	32,754.95	100,801.72
To the Panama Railroad, including steamships and Hotel Washington.....	16,542.51	21,396.32	31,985.67
To the United States Government including the Army and Navy.....	87,052.09	100,030.12	177,730.37
To individuals and companies through charge accounts.....	24,555.36	31,011.02	24,340.51
To individuals purchasing coupons.....	291,689.06	403,042.47	491,495.85
Totals.....	521,477.01	684,657.88	963,341.09

Respectfully,

M. L. WALKER,
Acting Governor.

Radio Pratique for Merchant Vessels.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., February 17, 1922.

CIRCULAR NO. 626-10:

Hereafter, ships with clean bills of health, from noninfected ports, and without sickness on board, intending to transit the Canal without taking supplies or stores of any kind or landing passengers or cargo, may be granted pratique by radio under the following conditions:

(a) By making application therefor by radio between the hours of 8 a. m. and 4 p. m. Such application to state:

1. That the vessel has a clean bill of health and has no sickness on board.
2. Names of ports and places visited within the past 10 days.
3. That the vessel intends to transit the Canal without taking stores of any kind or landing passengers or cargo.

(b) Radio will be addressed to Chief Quarantine Officer through Port Captain.

(c) Pratique will not be considered as granted until reply has been received from Port Captain "Chief Quarantine Officer grants pratique."

M. L. WALKER,
Acting Governor.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, January, 1922.*

From—	North America.																	Europe.										Grand totals.	East coast of South America.	Per cent of total cargo.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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	North Atlantic ports.				South Atlantic ports.			Gulf ports.		Total, United States.		West Indies.		Cristobal, C. Z.		Total, North America.		British Isles.		Belgium.		Denmark.		France.		Germany.					Holland.		Italy.		Spain.		Europe. [†]		Total, Europe.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	North At-	lantic ports.	South At-	lantic ports.	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Spain.	Europe. [†]	Total, Europe.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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Chile.....	14,233	6,734	5,882	26,849	67	26,916	14,328	4,076		6,468	15,738		4,079	55	1,122	45,866																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</

* Figures represent tons of 2,240 pounds.

† General cargo not routed so as to allow segregation between definite ports.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, January, 1922.¹

From—	SOUTH AMERICA.				NORTH AMERICA.						ASIA.				AUSTRALASIA.				Grand totals.	Per cent of total cargo.		
	Chile.	Colombia.	Ecuador.	Peru.	Total, South America.	West coast of United States.	West Canada.	West coast of Central America.	Balboa, C. Z.	Mexico.	Total, North America.	China.	Japan.	Philippines.	Far East.	Total, Asia.	Australia.	New Zealand.			Australasia.	Total, Australasia.	Hawaii.
UNITED STATES:																						
North Atlantic ports.	10,088	300	702	3,549	14,009	87,965	400	51	17		88,433	17,883	52,780	336		70,999	8,401	10,000		18,401		8,092
South Atlantic ports.						1,063					1,063	720	13,469			14,179						
Gulf ports.	1,716				1,716	24,103					24,103	171	36,590			36,761	6,300	4,625		10,925		
Total, United States.	11,774	300	702	3,549	16,325	113,131	400	51	17		113,599	18,774	102,829	336		121,939	14,701	14,625		29,326		8,092
East coast of Mexico.	37,152				37,152		15,000		2,523		17,523											
Cristobal, C. Z.	1,005	417	506	707	2,635	369	4,200	4,307		700	6,160								61			
West Indies.											12,200	5,100	12,944		7,271	25,315						
East coast of Canada.																	1,783			1,783		
Total, North America.	49,931	717	1,208	4,256	56,112	113,500	19,600	4,358	10,540	700	148,698	23,874	115,773	336	7,271	147,254	16,484	14,625	61	31,170	8,092	391,326
EUROPE:																						
Belgium.	545		97	25	667	8,660	233				8,913											
British Isles.	6,785		230	2,840	9,855	6,951	8,198			125	15,274											
Denmark.						4,800					4,800											
France.			71	39	110																	
Germany.	1,994		610	2,718	5,322	957		746			1,703											
Holland.			685		685	1,407	115				1,522											
Italy.	325		304	481	1,110																	
Spain.	33		97	33	163																	
Total, Europe.	9,682		2,094	6,136	17,912	22,775	8,566	746		125	32,212											
East coast of South America.		490			490												3,185					
Grand totals.	59,613	1,207	3,392	10,392	74,514	136,275	28,166	5,104	10,540	825	180,910	23,874	118,958	336	7,271	150,439	16,484	56,710	1,035	74,229	13,499	493,591
Per cent of total cargo:																						
January, 1922.	12.0	0.2	0.7	2.1	15.0	27.6	5.7	1.0	2.1	0.2	36.6	4.8	24.2	0.1	1.5	30.6	3.3	11.5	0.2	15.0	2.8	100.0
December, 1921.	5.2	0.3	0.5	2.3	12.1	24.2	1.4	1.0	5.0	0.6	32.2	5.7	23.9	1.3	9.8	40.7	2.0	5.7	5.2	12.9	2.1	
January, 1921.	27.6	0.4	0.8	3.5	35.2	20.5	0.9	0.5	5.8	2.2	29.9	6.8	5.3	1.2	2.7	16.0	4.6	13.2	1.1	18.9		

¹ Figures represent tons of 2,240 pounds.² General cargo not routed so as to allow segregation between definite ports.

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, February 25, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.				Entered Canal.				Completed transit.				Cleared for sea.				Nationality.	Line.	Length.	Beam.		Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.									Nature.	Tons.	Gross.	Net.
Norfolk	18	13	19	9	23	13	18	20	13	17	52	19	18	25	19	18	25	Danish	Norden Steamship Co.	306.0	45.0	23.7	Baltimore, New York	Guayaquil	General, coke, etc	3,913	3,322	2,485
Admiral Coghlan	18	21	19	5	50	19	14	24	19	18	25	19	18	25	19	18	25	British	Andrew Weir & Co.	370.0	52.0	27.0	New York	Tsauriga	General	6,700	5,915	4,467
Wabash	18	22	19	9	07	19	15	20	19	18	25	19	18	25	19	18	25	American	Luckenbach Line	496.0	68.2	21.0	Philadelphia	Los Angeles	General	2,600	11,487	8,732
Wabash	19	17	20	8	23	20	13	58	21	15	20	20	15	20	20	15	20	American	Wickens Steamship Co.	434.0	57.0	22.0	New York	Los Angeles	General	3,000	7,983	5,882
Wabash	19	17	20	8	23	20	13	58	21	15	20	20	15	20	20	15	20	British	Pacific Metals Corporation	81.0	25.6	9.0	Cristobal	Buenaventura	General	10	132	73
Wabash	19	18	20	8	15	20	13	58	21	15	20	20	15	20	20	15	20	British	Pacific Metals Corporation	450.0	58.0	25.0	New York	Valparaiso	General	2,295	9,171	6,247
Wabash	19	18	20	8	15	20	13	58	21	15	20	20	15	20	20	15	20	German	Kosmos Line	410.9	50.7	20.6	Hamburg	Pto. Chicama	General	1,805	6,652	4,704
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	British	Lytle Shipping Co.	405.0	52.0	24.5	Liverpool	Osaka	Sugar	7,400	5,650	4,071
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	British	Scottish Navigation Co.	360.0	49.0	24.8	Manati	Hongkong	Sugar	5,250	4,323	3,209
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	American	United States Navy	307.8	42.2	20.6	Cristobal	Gatun Lake	General	1,428	3,429	2,206
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	American	Pacific Mail Steamship Co.	485.0	62.3	26.2	Cristobal	San Francisco	General	13,582	11,600	8,685
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	British	New Zealand Shipping Co.	467.0	58.3	23.0	London	Auckland	General	2,695	8,413	5,971
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	British	Prince Line, Ltd.	467.0	58.3	23.0	London	Valparaiso	General	711	4,532	3,182
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	Colleen	Chilean Line	378.0	40.0	23.2	Cristobal	Valparaiso	General	20	737	335
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	American	Colombian Maritime Co.	190.0	29.1	12.5	Cristobal	Buenaventura	General	116	1,471	999
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	Norwegian	Camillo Eitzen & Co.	231.5	35.2	12.5	New York	Guayaquil	General	3,364	5,930	4,395
Wabash	19	22	20	10	25	20	18	28	20	18	27	20	18	27	20	18	27	British	Pacific Steam Navigation Co.	391.5	50.0	23.6	London	Valparaiso	General	5,315	7,940	6,068
Wabash	22	6	20	12	21	22	20	20	22	23	30	22	23	30	22	23	30	British	Ellerman & Bucknall	443.0	55.0	25.0	Newcastle	Los Angeles	General	6,677	9,160	6,671
Wabash	22	17	23	6	55	23	14	25	23	15	45	23	15	45	23	15	45	British	Poverty Bay Farmers Meat Co.	420.0	54.0	18.6	Cardiff	Auckland	Ballast	8,450	7,330	5,241
Wabash	22	17	23	6	55	23	14	25	23	15	45	23	15	45	23	15	45	American	United States Steel Products Co.	411.5	55.0	27.7	Baltimore	Los Angeles	Steel products	9,170	7,445	5,345
Wabash	22	17	23	6	55	23	14	25	23	15	45	23	15	45	23	15	45	Japanese	Nippon Yusen Kaisha	420.0	56.0	27.6	New York	Molokai	General	4,590	9,944	7,000
Wabash	22	21	24	9	17	23	17	23	18	45	23	18	45	23	18	45	23	British	Federal Steam Navigation Co.	473.0	59.0	27.0	New York	Auckland	General	7,570	8,243	6,268
Wabash	23	6	53	23	6	58	23	18	25	19	28	23	19	28	23	19	28	American	Standard Oil Co.	435.0	56.0	27.0	Easton	Seattle	General	775	784	471
Wabash	23	16	24	10	38	23	18	25	23	0	45	23	0	45	23	0	45	American	Meisinger Fruit and Steamship Co.	187.0	33.0	18.0	Mobile	San Francisco	Pig iron, resin.	7,000	7,696	5,669
Wabash	24	12	15	24	7	05	24	13	24	18	26	24	18	26	24	18	26	British	Harrison Line	469.0	56.0	23.0	Galveston	Los Angeles	General	8,048	9,160	6,671
Wabash	24	12	15	24	7	05	24	13	24	18	26	24	18	26	24	18	26	American	United States Navy	449.0	57.0	27.1	Cristobal	Manila	General, oil	12,821	12,821	9,507
Wabash	24	10	57	24	10	42	24	18	12	24	18	46	24	18	46	24	18	British	White Star Line	490.0	63.0	24.0	Baltimore	Wellington	General	5,707	8,646	6,245
Wabash	24	17	23	6	55	23	14	25	23	15	45	23	15	45	23	15	45	British	White Star Line	490.0	63.0	24.0	Southampton	Wellington	General	5,707	8,646	6,245
Wabash	24	17	23	6	55	23	14	25	23	15	45	23	15	45	23	15	45	American	United American Line	398.6	55.2	24.0	New York	Los Angeles	General	5,600	5,577	4,225
Wabash	24	20	38	25	7	30	25	13	25	16	13	25	16	13	25	16	13	American	Munson Line	370.0	53.0	24.0	Galveston	San Francisco	Subsidiary	5,905	6,005	4,416
Wabash	25	6	25	25	8	35	25	10	35	25	21	25	21	25	21	25	21	British	Hain Steamship Co.	490.0	52.0	23.0	Barry	Wellington	Coal	5,905	6,005	4,416
Wabash	25	8	53	25	9	46	25	17	28	25	18	33	25	18	33	25	18	American	Luckenbach Line	446.0	56.0	19.7	New York	Los Angeles	General	3,500	8,508	6,179

* Motor schooner.

* Tug, towing barges.

* Steam schooner.

* Cotton, tin plate, steel plate, ammonia, lubricating oil, and general.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending February 25, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Buenos Aires	Spanish Line		February 19.		330
Alvarado	Pacific Steam Navigation Co.		February 19.		244
Abangarez	United Fruit Co.	February 19.	February 19.		25
Ebro	Pacific Steam Navigation Co.	February 19.	February 20.	201	(*)
Essequibo	Pacific Steam Navigation Co.	February 19.	February 20.	21	(*)
Laura C. Hall	Pacific Metals Corporation		February 20.		19
Huasco	Chilean Line		February 22.		711
Cuba	Pacific Mail Steamship Co.		February 22.		1,596
Balboa	Colombian Maritime Co.	February 19.	February 22.	162	29
Parismina	United Fruit Co.	February 20.	February 23.	546	60
Urubamba	Peruvian Line	February 20.		1,465	
Bologna	Italian Line	February 21.		7	
Eiger	Caribbean Steamship Co.	February 22.	February 22.	24	7
Junin	Pacific Steam Navigation Co.	February 22.	February 22.	16	32
Colon	Panama Railroad Steamship Line.		February 23.		2,351
Virginie	French Line	February 22.	February 23.	(*)	116
Sixaola	United Fruit Co.	February 22.	February 23.	(*)	1
Santa Marta	United Fruit Co.	February 22.	February 24.	216	87
Cauca	Pacific Steam Navigation Co.	February 23.		1,235	
Artigas	N. American & Western S. S. Co.	February 23.	February 24.	1,272	(*)
Abangarez	United Fruit Co.	February 23.	February 23.	1	4400
Camden	United Fruit Co.	February 24.		8,901	
Venezuela	Royal Netherlands W. I. Mail	February 24.	February 25.	200	4
Saint Andre	French Line	February 24.		30	
Ulua	United Fruit Co.	February 24.	February 25.	359	131
San Mateo	United Fruit Co.	February 25.	February 25.	21	
Ares	Royal Netherlands W. I. Mail	February 25.		380	

* No cargo discharged.

* No cargo laded.

* Packages.

* Pounds.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending February 25, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Buenos Aires	Transatlantic Co.	February 16.	February 18.	2	
Laura C. Hall	Pacific Metals Transportation Co.	February 20.	February 20.		50
Cuba	Pacific Mail Steamship Co.	February 22.	February 22.		7
Politician	T. and B. Harrison	February 24.	February 24.		29
Barima	Pacific Steam Navigation Co.	February 25.	February 25.	8	

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended February 25:

Tug *Gorgona*, dock and undock; stage and clean; chip and paint bottom; draw tail shaft for examination; rewood stern tube bearing; examine and repair sea valves; renew sea valve strainers, where necessary; renew bad order zincs; overhaul blow-down line on ship's side; manufacture and install metallic packing on piston rod, circulating pump; repair internal feed pipe of forward boiler; electric weld cracks in blades of propeller; electric weld collars on staybolts in main boilers; furnish air for operating ship's auxiliaries; steamship *Advance*, dock and undock; stage and clean; paint bottom 1 coat of anticorrosive and 1 coat of antifouling; examine propeller; tighten 28 propeller blade nuts; re-cement, repack stern gland; renew gaskets; repack and renew 5 sea valves; manufacture 24 $\frac{5}{8}$ " x 3" studs; manufacture 2 glands for ice machine; drill out 2 broken plugs in oil system and install new plugs; manufacture 8 piston rings for ice machine; install 2 patches on bottom; renew 3 zinc plates; calk 16 feet of seams; cut out and redrive 25 rivets and electric weld 185 rivets.

PREVIOUSLY REPORTED.

Barge *No. 135*, straighten coaming; tighten bad order rivets; drill barge *L-55*, remove from water and place on dock; remove copper sheathing in spots for examination of hull; tug *Mariner*, dock and undock; scale and paint bottom and convert

from coal burner to oil burner as per specifications; barge *No. 132*, dock and undock; scale and paint bottom and necessary repairs below the water line, on hull.

The following vessels were at the Cristobal shops for repairs during the week ended February 27:

Steamships *Parismina*, repair hole in shell plating; remetal and bore crosshead slipper for H. P. engine; *Advance*, weld mooring chock; roll tubes and calk stay-bolts, port boiler; *Virginie*, electric weld cracks in furnaces; furnish diver to remove cable from propeller; *Wellesley*, weld eyes on stack guys; weld cylinder head for pump; manufacture pipe blank; U. S. steamer *Nones*, dock and clean bottom; repair sheathing and calk hull; renew fender guard irons and stem band bolts; manufacture new rudder shoe and skag; alter shape of rudder; pull tail shaft for inspection; install spare propeller; remetal main engine brasses; true up rods; check alignment of engine and test out; repair reversing engine, steering engine, circulating pump, and main steam pipe; repair hot well; overhaul anchor windlass, etc.; steamships *Balboa*, manufacture 2 eccentric rods for dynamo engine; manufacture 1 set of steering chains; *Cauca*, manufacture piston rod, strainer tube, 4 valves, 4 springs, and reface 8 valves for refrigerator; manufacture 6 brass rings for Weir's pump, etc.; *Venezuela*, weld bake oven pipes; manufacture copper pipe for anchor windlass; repair armature, etc.; *Arigas*, *Santa Marta*, *St. Andre*, and launch *Cruces*, minor repairs.

Hawaiian Sugar.

The *Shipping Register*, of San Francisco, quoting officials of the Matson Line, states that the entire Hawaiian sugar crop of 1922, estimated at 505,000 tons, will be brought to the mainland through the port of San Francisco. Heretofore a large part of the crop has always been shipped through the Panama Canal to refineries on the Atlantic seaboard. The change is ascribed to Cuban competition and to improved refining facilities on the Pacific coast.

The amount of Hawaiian sugar shipped through the Panama Canal during the calendar year 1921 was 115,571 tons. One cargo of 8,055 tons passed through in January, 1922.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective March 1, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.25
Gasoline, motor grade.....	Gal.	.40
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.175
Oakum, Navy, unspun.....	Lb.	.175
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Pbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.675
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.55
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.14
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.035
Waste, cotton, colored.....	Lb.	.175
Waste, cotton, white.....	Lb.	.20

Official Circular.

Parlor Car Service Resumed.

PANAMA RAILROAD COMPANY,
OFFICE OF MASTER OF TRANSPORTATION,
BALBOA HEIGHTS, C. Z., February 24, 1922.
CIRCULAR No. 124:

To all concerned—Effective Wednesday, March 1, parlor cars will be placed back in regular service on trains Nos. 2 and 3, and 7 and 8.

W. F. FOSTER,
Master of Transportation.

Approved:
S. W. HEALD,
Superintendent.

Current Net Prices on Coal, Fuel Oil, and Diesel Oil.

Coal is being supplied to steamships including warships of all nations delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa.

Special prices for coal in large quantities as specified below, taken from alongside Cristobal Coaling Plant by vessels transiting the Canal:

- (a) To vessels taking 1,200 tons or over;
 - (b) To vessels taking between 825 and 1,200 tons and bunkering full;
 - (c) To vessels taking 825 or more tons and more than quantity required to bunker full;
- Price to the above three classes, per ton of 2,240 pounds, \$10.
- (d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at \$10 per ton of 2,240 pounds.
 - (e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at \$10 per ton.
 - (f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.
 - (g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 4 to Tariff No. 5 will apply. (\$15 at Cristobal, \$18 at Balboa.)

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Typewriters For Sale.

The Supply Department has on sale a number of Underwood typewriters, second hand, model 4. Price range from \$20 to \$30. Inspection can be made by applying to Storekeeper, S. D., administration Building, Balboa Heights.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars to those receiving THE PANAMA CANAL RECORD. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Hours of Departure of Passenger Trains.

Following are the hours of departure of the passenger trains of the Panama Railroad running between the Atlantic and the Pacific:

From Colon: 9.10 a. m., 12.15 p. m., 4 p. m.
From Panama: 7 a. m., 12.15 p. m., 6.10 p. m.
The trains leaving at 12.15 p. m. do not run on Sundays and holidays; the others are daily.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line), Pacific Mail Steamship Company, and Matson Line. The two last named charge \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

Certificate.

By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Volume XV.

Balboa Heights, C. Z., March 8, 1922.

No. 30.

Difficult Salvage Job on the "Garfield."

The salvage section of The Panama Canal has been engaged since the latter part of January in the effort to save the American steamer *Garfield*, of the Grace Line, which is aground in the Bay of Galera de Zamba, on the coast of Colombia, about 25 miles to the northeast of Cartagena. The work has been difficult and hazardous on account of gales and rough seas over an area of shallow water.

Skirting the coast in the night the master of the *Garfield* mistook the Galera Point light for the Puerto Colombia light. Running into shoal water, he dropped anchor, but the vessel, swinging around in the heavy seas, dragged anchor and grounded astern. Then the anchor carried away and the *Garfield* was swept in toward land for a distance of $1\frac{3}{4}$ miles from the 18-foot contour, coming to rest in 5 feet of water, although she had been drawing 14 feet 6 inches in the open sea. The task of the salvors is to bring her out again across that distance to deep water. To do this it has been necessary to lay about 5,500 feet of steel ground cable, to be attached to anchors, against which the *Garfield* can pull with her own anchor engine and other winches. The work has gone slowly on account of the impossibility of sending competent equipment into the shallows. The salvage steamer *Favorite*, going as near as her master dared risk, has grounded repeatedly, and vessels of lighter draft have been unable to handle the work.

The *Favorite* lost her rudder last week, and the tug *Tavernilla* was despatched to tow her back to Cristobal for repairs. Work on her is being rushed at the Cristobal dry dock, and upon its completion she will return to the *Garfield*.

The *Garfield* has cargo aboard, but so far it has not been necessary to jettison it. Unless worse weather prevails it is expected that the ship will be saved within the coming week.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending March 4, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Ares	Royal Dutch W. I. Mail Co.	February 28.	February 28.	230	
Jamaica	Pacific Steam Navigation Co.	February 28.	February 28.		13
Salvador	Pacific Steam Navigation Co.	March 1.	March 1.	5	
Aysen	South American Steamship Line.	March 2.	March 3.	91	
Toba Maru	Nippon Yusen Kaisha.	March 2.	March 3.	150	
Rakuyo Maru	Toyo Kisen Kaisha.	March 2.	March 3.	517	
Laura C. Hall	Pacific Metals Transportation Co.	March 4.	March 4.	15	

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, March 4, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Australind	25	14 34	26	9 9	26	13 43	26	14 42	British	Australind Steamship Corp.	384.1	50.1	22.3	St. John	Melbourne.	General	2,412	5,654	4,167
Hum Branch.	25	17 35	26	7 47	26	14 48	26	17 16	British	Nautilus Steamship Co.	400.0	53.0	20.0	Liverpool	Guayaquil.	General	4,312	5,761	3,881
San Joaquin.	25	20 30	26	8 20	26	15 57	26	17 25	Norwegian.	W. Wilhelmsen	425.4	57.1	25.0	Tampico.	Toyoquia.	Crude oil	9,487	7,059	5,043
Arrivas	23	6 37	26	9 12	26	16 48	26	17 50	American.	N. Atl. & West. S. S. Co. (S. B.)	380.0	54.0	18.7	Philadelphia	Seattle.	General	2,426	6,161	4,426
Santa Isabel	25	16 04	26	11 20	26	18 53	26	19 56	American.	American and Cuban S. S. Line.	251.0	43.6	26.8	New York	San Francisco	General, iron.	3,260	8,233	1,740
Ossage	26	12 30	26	12 50	26	16 28	27	17 47	American.	Moore & McCormack (S. B.)	395.0	49.0	25.0	New Orleans	Los Angeles	General	5,732	5,220	3,734
Dorset	26	12 30	27	6 15	27	16 48	27	17 45	British	Federal Steam Navigation Co.	400.0	58.0	29.0	Liverpool	Auckland	General	7,270	9,188	6,581
Saint Andre.	24	9 55	27	7 05	27	16 37	27	19 04	French	French Line	397.9	50.0	17.2	Bordeaux	Guayaquil	General	1,090	5,917	4,146
Ares	25	11 40	27	8 20	27	17 50	28	16 30	Dutch	Royal Netherlands W. I. Mail.	340.0	48.0	13.8	Amsterdam	Guayaquil	General	1,600	4,385	3,195
Zealandic	26	18 27	27	9 30	27	19 03	27	20 02	British	Shaw, Saville & Albion Co.	477.5	63.1	26.0	Liverpool	Auckland	General	3,670	11,754	8,452
Wabash	27	15 32	28	6 35	28	15 02	28	16 10	American.	N. Atl. & West. S. S. Co.	381.0	49.9	26.0	Baltimore	Los Angeles	General, steel	4,600	5,825	4,152
Independence	27	6 50	28	7 20	28	16 06	28	17 25	American.	Barber Line (S. B.)	440.0	56.0	30.0	New York	Yokohama	General	10,000	8,200	6,063
Renacio	27	9 00	28	8 32	28	17 09	28	18 23	Chilean.	Chilean Line	412.0	50.5	28.3	Liverpool	Valparaiso	General, coal.	2,738	6,050	3,442
Urumbaba	20	15 23	28	11 10	28	18 19	28	20 30	Peruvian.	Pacific Steam Navigation Co.	220.0	34.0	12.10	Pto. Colombia	Tumaco	General	236	1,187	622
Ruth Alexander	28	20 52	1	6 12	1	13 27	2	12 25	American.	Dollar Line	439.0	56.0	21.2	Baltimore	Seattle	General	570	4,803	2,951
Chas. H. Cramp	1	6 15	1	7 40	1	14 56	1	16 55	American.	Atl. Gulf & Pacific Co. (S. B.)	404.6	59.0	22.0	New York	Los Angeles	General	2,109	9,237	6,302
Unita	1	9 00	1	9 49	1	16 54	1	18 00	Norwegian.	F. M. Wrangell & Co.	338.1	48.0	16.0	Norfolk	Astoria	Ballast	4,000	6,755	4,750
Blossom Heath.	1	1 54	1	10 40	1	18 53	1	19 58	British	Steam Navigation Co. of Canada.	400.0	52.0	20.2	New York	Yokohama	General	6,530	6,005	4,225
Santa Veronice.	1	6 30	1	12 35	1	19 43	1	21 00	American.	American and Cuban S. S. Line.	251.0	43.0	23.0	New York	Los Angeles	General	2,818	2,804	1,794
Theoben	28	20 52	2	6 15	2	13 33	2	15 14	German.	Kosmos Line	339.0	48.0	16.0	Bremen	Mazatlan	General	1,242	4,004	2,924
Oreoma	1	16 53	2	8 10	2	15 14	2	16 30	British	Pacific Steam Navigation Co.	511.6	62.0	25.2	Liverpool	Valparaiso	General	1,609	12,267	7,943
Lehigh	2	11 16	2	11 33	2	18 34	2	19 37	American.	N. Atl. & West. S. S. Co. (S. B.)	300.0	54.2	19.0	Boston	Seattle	General, steel	2,134	6,134	4,202
Ansuir	1	19 04	2	9 35	2	16 09	2	19 48	German	Roland Line.	408.0	54.0	17.0	Hamburg	Guayaquil	General	1,601	6,542	4,532
Jacob Luckenbach	2	18 10	3	6 47	3	15 26	3	16 25	American.	Luckenbach Line	414.5	53.7	27.0	Mobile	Seattle.	General	5,688		
Salvador	1	20 10	3	7 50	3	16 27	3	17 25	British	Pacific Steam Navigation Co.	215.0	33.5	13.2	Cristobal	Champerico.	Ballast		1,213	692
Wovo Maru.	3	6 58	3	8 50	3	17 26	3	24 00	Japanese.	Toyo Kisen Kaisha	400.0	33.5	13.2	New York	Kobe	General	7,050	6,187	4,541
Seattle Maru.	3	10 35	3	11 05	3	18 53	3	20 09	Japanese.	Oseka Shosen Kaisha	410.0	51.0	25.5	New Orleans	Kobe	(*)	5,060	6,226	4,001
David Putnam			3	7 10	3	8 37	3	9 37	American.	United States Army				Cristobal	Gatun Lake.		850		
Hector	3	14 24	4	6 20	4	14 20	4	15 25	British	Alfred Holt & Co.	391.0	47.2	18.0	Liverpool	Seattle	General			
Patuxent	3	14 24	4	6 20	4	14 20	4	15 25	American.	United States Navy				Cristobal	Balboa				
Montana	21	17 07	4	6 34	4	14 12	4	15 18	French Line	French Line	421.0	55.0	26.10	Harve	Vancouver	General	5,446	6,327	4,369
Tregadle	3	12 25	4	7 22	4	17 03	4	17 50	French	Ham Steamship Co.	400.2	52.1	23.0	Barry	Timaru, N. Z.	Coal	5,559		
Hawkeye State.	4	6 25	4	8 23	4	18 20	4	19 05	British	Mason Line (S. B.)	517.0	72.2	25.4	Baltimore	Honolulu	General	300	15,234	10,471
Almagro.	4	7 17	4	9 03	4	19 08	4	19 47	American.	McAndrews Co.	303.0	43.0	16.0	New York	Guayaquil	General	930	2,878	1,714
	3	18 08		11 57		20 16		21 45	British.										

* Iron, cotton, and general.

* Tug.

* Launch.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Pacific	25	15	50	26	6	49	26	15	05	26	23	20	Danish	The Oversea Trading Co.	378	0	52	2	22	10	Apia, Samoa I.	Aarhus, Den.	Copra.	6,364	5,780	4,507
S. C. 284	24	11	51	26	7	09	26	14	15				American	United States Navy	110	0	16			Balboa	Cristobal	(s)	6,035	5,112	3,511	
Apple Branch	26	7	15	26	7	53	26	15	36	26	19	15	British	Nautilus Steamship Co.	370	0	51	7	23	10	Valparaiso	Liverpool	Ore.	10,600	7,867	4,829
Cubore	25	17	30	27	7	20	27	15	17	27	15	17	American	Ore Steamship Corporation	450	6	57	2	27	0	Cruz Grande	Baltimore	General	2,813	5,726	4,086
Santa Teresa	27	10	25	27	11	33	27	18	05	27	23	30	American	Grace Line	360	2	51	6	22	0	Talcahuano	New York	General	6,889	5,730	5,448
Steel Mariner	27	10	25	27	11	33	27	18	05	27	23	30	American	Islamican Steamship Lines	424	2	56	2	22	0	San Pedro	New York	General	6,889	5,730	5,448
Dochra	27	14	25	27	13	09	27	20	34	27	21	45	American	Barber Line	376	0	51	0	18	6	Seattle	New York	General, lumber	4,000	5,158	3,813
Argosy	27	14	25	27	6	32	28	14	50	28	16	30	American	Wessel & Duval (S. B.)	390	0	54	2	24	7	Valparaiso	New York	(s)	7,245	6,161	4,379
Canadian	27	18	20	29	8	08	28	16	11	28	17	31	British	Canadian Government	400	8	52	4	18	6	Brisbane	Halifax	General	2,600	5,877	4,070
Pioneer	27	17	55	1	8	35	1	15	53	1	15	53	American	Pacific Mail Steamship Co. (S. B.)	502	1	62	2	24	0	San Francisco	New York	Ballast	12,031	8,443	
Granite State	27	14	38	1	10	17	1	17	03	1	17	03	American	Mason Navigation Co. (S. B.)	517	0	72	2	24	1	Honolulu	Baltimore	Borax, general	513	15,234	10,405
Buckeye State	2	12	50	1	14	00	1	20	10	3	7	50	British	Pacific Steam Navigation Co.	215	0	33	5	13	6	Guayaquil	Cristobal	(s)	212	1,213	692
Salvador	2	12	05	3	6	20	3	15	25	3	7	50	Chilean	Chilean Line	379	6	44	3	18	0	Valparaiso	Cristobal	General	64	4,535	3,068
Aysen	2	16	30	3	7	38	3	15	25	5	18	25	Dutch	Royal Dutch Steamship Co.	362	0	52	0	22	0	Valparaiso	Hamburg	General, nitrate	4,450	5,117	3,807
Helder	2	16	30	3	7	38	3	15	25	5	18	25	American	Alaska Steamship Co.	345	3	49	6	24	3	Seattle	New York	(s)	5,345	4,593	3,381
Kennecott	28	17	45	3	11	13	3	18	32	4	7	00	Japanese	Nippon Yusen Kaisha	445	0	58	0	22	0	Manila	New York	General	7,813	8,058	6,743
Toba Maru	2	18	30	3	11	13	3	18	32	4	7	00	Japanese	Nippon Yusen Kaisha	445	0	58	0	22	0	Manila	New York	General	7,813	8,058	6,743
James Thompson	3	10	35	3	11	40	3	21	30	4	5	00	American	The Resolved Corporation	260	8	45	0	22	0	Manila	New Orleans	Lumber	1,600	2,234	1,680
Clan Morrison	3	16	30	4	6	41	4	14	05	4	15	52	British	Chen Line, Ltd.	499	5	53	5	23	0	Rio Congo	United King.	Copra	3,850		
Gen. O. H.	3	22	28	4	7	51	4	15	15	5	13	05	American	Panama Railroad Steamship Line	356	4	45	3	18	3	Guayaquil	New York	(s)	1,940	4,503	2,984
Ernst	4	10	27	4	9	06	4	16	02	4	16	02	American	Lockenbach Line	331	5	47	0	20	3	San Francisco	New Orleans	General	2,103	4,147	3,259
Pleides	4	0	45	4	9	13	4	17	06	4	17	06	American	Lockenbach Line	407	7	53	7	21	0	Seattle	New York	General	6,000	8,552	6,236
K. I. Luckenbach	4	0	45	4	9	13	4	17	06	4	17	06	American	American-Hawaiian Line	446	0	56	1	25	0	Los Angeles	New York	General	4,647	7,112	4,896
Ohioan	4	4	30	4	10	30	4	18	45	5	12	40	American	United States Steel Products Co.	395	5	55	0	24	6	Portland	New York	Lumber, general	6,582	7,285	5,256
Steel Age	4	13	00	4	13	28	4	21	10	5	12	40	American	United States Steel Products Co.	395	5	55	0	24	6	Portland	New York	Lumber, general	6,582	7,285	5,256

* Motor ship.

* Borax and general.

* Copper, ore, and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

* Coffee, cocoa, ivory nuts, and general.

* Lumber, wheat, and general.

* Hides, coffee, and cocoa.

PORT OF CRISTOBAL.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Feb. 26.	Zacapa	United Fruit Co.	New Orleans via Habana.	Feb. 26	San Juan ²	Bluefields Fruit Co.	Bluefields
Feb. 26.	Norwegian	Leyland Line	Liverpool via waypoints.	Feb. 27	St. Michel ¹⁰	United States Army	New York via San Juan.
Feb. 27.	Cartago	United Fruit Co.	Port Limon.	Feb. 27	Zacapa	United Fruit Co.	Bocas del Toro.
Feb. 28.	Venezuela	Royal Netherlands W. I. Mail	Port Limon.	Feb. 28	Cartago	United Fruit Co.	New Orleans via waypoints.
Feb. 28.	Chona	Anglo-Saxon Petroleum Co	Tampico.	Feb. 28	Norwegian	Leyland Line	New Orleans.
Feb. 28.	Macoris	French Line	Havre via waypoints.	Mar. 1	San Gil	United Fruit Co.	Boston via waypoints.
Mar. 1	White Star Line	New York via waypoints.	Boston via waypoints.	Mar. 1	Venezuela	Royal Netherlands W. I. Mail.	Puerto Colombia.
Mar. 1	San Gil	United Fruit Co.	Port Arthur.	Mar. 1	Camden	United Fruit Co.	Tampico.
Mar. 1	Occidental	Texas Oil Co.	New York via Haiti.	Mar. 2	Chona	Anglo-Saxon Petroleum Co.	New Orleans via waypoints.
Mar. 1	Panama	Panama Railroad Steamship Line	Bocas del Toro.	Mar. 2	Megantic	White Star Line	New York via waypoints.
Mar. 2	Zacapa	United Fruit Co.	New York via waypoints.	Mar. 2	Zacapa	United Fruit Co.	New Orleans.
Mar. 3.	Tolosa.	United Fruit Co.	New York via waypoints.	Mar. 3.	Occidental	Texas Oil Co.	Tampico.

* Transport.

(Continued on page 400, column 2.)

Commercial Traffic Through the Panama Canal in February, 1922, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of United States to Far East:</i>							<i>Long tons.</i>
Japanese.....	7	29,533	32,582	42,795	29,106	\$36,196.80	49,176
United States.....	5	20,337	28,289	30,474	18,671	25,421.25	42,472
British.....	5	20,675	26,682	31,182	19,583	25,676.65	41,858
Totals.....	17	70,545	87,553	104,451	67,360	87,294.70	133,506
<i>United States coastwise:</i>							
United States.....	25	93,004	117,512	143,103	92,925	116,235.50	94,548
<i>From Europe to west coast of United States:</i>							
British.....	2	11,495	11,920	12,348	7,915	11,423.85	5,315
United States.....	11	4,426	5,938	7,252	4,426	4,275.36	.....
Swedish.....	1	2,303	3,969	3,802	2,839	2,878.75	1,385
Totals.....	14	18,224	21,827	23,402	15,180	18,577.96	6,700
<i>From Europe to west coast of South America:</i>							
British.....	4	11,475	16,309	18,346	11,500	14,343.75	13,373
German.....	2	9,156	9,933	12,022	7,554	11,134.30	4,315
Dutch.....	2	4,556	5,827	7,311	4,504	5,695.00	2,850
French.....	1	3,600	4,146	5,765	3,681	4,500.00	1,090
Chilean.....	1	2,754	3,442	5,961	2,981	3,442.50	2,738
Totals.....	10	31,541	39,657	49,405	30,220	39,115.55	24,366
<i>From east coast of United States to west coast of South America:</i>							
United States.....	5	14,060	16,792	22,184	13,680	15,726.88	10,404
Norwegian.....	3	3,784	5,013	6,181	3,753	4,730.00	5,207
British.....	1	4,778	6,247	8,480	5,174	5,972.50	2,295
Danish.....	1	2,438	2,485	2,465	1,685	3,047.50	4,246
Swedish.....	1	1,338	1,431	2,242	1,595	1,672.50	1,769
Totals.....	11	26,398	31,968	41,552	25,887	31,149.38	23,921
<i>From Cristobal, C. Z., to west coast of South America:</i>							
British.....	6	2,796	3,360	4,977	2,957	3,108.70	1,396
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	901
Chilean.....	2	3,086	5,338	6,527	3,905	3,857.50	1,328
United States.....	2	668	670	1,230	746	652.50	20
Totals.....	12	9,571	15,278	22,095	12,708	11,394.95	3,645
<i>From Europe to Australasia:</i>							
British.....	9	52,222	63,962	75,381	47,258	64,858.05	30,294
<i>From United States to Australasia:</i>							
British.....	3	14,838	17,568	21,242	13,463	18,345.80	19,935
United States.....	1	3,604	4,480	5,816	3,604	4,505.00	5,600
Totals.....	4	18,442	22,048	27,058	17,067	22,850.80	25,535
<i>From Europe to west coast of Canada:</i>							
British.....	1	4,776	5,971	7,569	4,793	5,970.00	2,695
United States.....	1	4,168	5,105	6,784	4,212	5,210.00	6,758
Totals.....	2	8,944	11,076	14,353	9,005	11,180.00	9,453
<i>From Cristobal, C. Z., to west coast of Central America:</i>							
British.....	2	1,401	1,577	2,731	1,463	1,751.25	1,370
<i>From east coast of Mexico to west coast of South America:</i>							
British.....	2	9,086	10,479	15,000	9,462	9,289.12	8,350
Norwegian.....	2	8,825	10,094	14,009	8,860	11,031.25	18,687
Totals.....	4	17,911	20,573	29,009	18,322	20,320.37	27,037
<i>From east coast of United States to west coast of Canada:</i>							
United States.....	2	8,530	9,246	12,126	8,476	10,662.50	13,050
<i>From Europe to Far East:</i>							
Japanese.....	1	5,174	5,979	8,230	5,115	6,467.50	.....
British.....	1	3,116	4,071	4,896	3,136	3,895.00	7,400
Totals.....	2	8,290	10,050	13,126	8,251	10,362.50	7,400
<i>From east coast of Canada to Australasia:</i>							
British.....	2	6,764	8,261	10,972	6,846	8,455.00	7,880

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>Foreign vessel between United States coastwise ports:</i>							<i>Long tons.</i>
British.....	1	4,786	5,669	7,380	4,830	\$5,982.50	7,000
<i>From east coast of Mexico to Far East:</i>							
Japanese.....	1	5,513	6,385	9,049	6,552	6,891.25	8,000
<i>From east coast of Mexico to Balboa, C. Z.:</i>							
United States.....	1	3,051	3,519	5,073	3,026	3,813.75	6,700
<i>From east coast of South America to west coast of United States:</i>							
United States.....	1	3,034	4,174	4,748	2,925	3,792.50	5,506
<i>From West Indies to Far East:</i>							
British.....	1	2,524	3,209	3,986	2,546	3,155.00	5,250
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	1	1,862	2,206	3,169	1,862	2,327.50	1,428
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	236
<i>Local:</i>							
United States.....	1	1,646	1,633	2,016	1,646	2,016.00	.....
Totals, February, 1922.	114	394,817	488,005	605,323	384,957	482,933.41	442,825
Totals, January, 1922..	125	416,527	513,764	646,371	420,419	516,256.62	493,591
Totals, February, 1921.	114	362,427	435,233	556,798	354,964	449,616.29	474,872

PACIFIC TO ATLANTIC.

<i>United States coastwise:</i>							
United States.....	19	68,776	89,862	109,745	69,126	\$84,133.82	84,330
<i>From west coast of South America to east coast of United States:</i>							
United States.....	6	16,108	20,648	26,911	16,266	20,131.30	26,454
British.....	3	9,324	11,452	15,701	9,629	11,655.00	9,586
Norwegian.....	2	6,112	6,698	8,534	6,106	7,364.05	10,043
Swedish.....	1	1,091	1,213	1,824	1,085	1,363.75	2,250
Totals.....	12	32,635	40,011	52,970	33,086	40,514.10	48,333
<i>From west coast of South America to Europe:</i>							
British.....	5	20,283	24,127	32,611	20,910	25,353.75	34,731
Italian.....	2	5,822	7,299	10,048	6,050	7,277.50	1,110
German.....	2	6,729	7,575	8,663	5,391	8,207.10	11,905
French.....	1	3,147	3,980	5,330	3,462	3,933.75	5,163
Dutch.....	1	2,012	3,120	3,209	1,989	2,515.00	4,230
Totals.....	11	38,023	46,101	59,861	37,802	47,287.10	57,139
<i>From west coast of South America to Cristobal, C. Z.</i>							
British.....	5	2,191	2,729	3,839	2,355	2,389.21	540
Chilean.....	2	3,086	5,338	6,527	3,905	3,857.50	468
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	3,552
United States.....	1	334	335	615	373	402.00	163
Totals.....	10	8,632	14,312	20,342	11,733	10,424.96	4,723
<i>From west coast of United States to Europe:</i>							
United States.....	3	12,938	17,293	20,803	13,005	16,172.50	26,500
British.....	3	11,111	13,742	16,266	9,879	13,888.75	17,866
Norwegian.....	1	3,046	3,886	4,894	3,054	3,807.50	6,400
Swedish.....	1	2,286	4,013	3,764	2,852	2,857.50	5,984
French.....	1	2,264	2,933	3,563	2,293	2,830.00	4,372
Totals.....	9	31,645	41,867	49,290	31,083	39,556.25	61,122
<i>From west coast of Canada to Europe:</i>							
United States.....	2	9,402	11,293	13,511	8,470	11,752.50	17,283
British.....	2	7,609	10,484	11,223	7,132	9,511.25	15,400
French.....	1	4,874	5,001	6,687	4,236	6,007.20	6,805
Dutch.....	1	4,474	6,911	7,310	4,495	5,592.50	9,693
Totals.....	6	26,359	33,689	38,731	24,333	32,863.45	49,181
<i>From west coast of Canada to east coast of United States:</i>							
United States.....	4	16,704	19,621	24,569	16,775	20,731.05	16,529

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From Australasia to Europe:</i>							<i>Long tons.</i>
British.....	4	24,305	28,157	37,773	24,906	\$30,248.75	21,717
Danish.....	1	4,131	4,507	4,088	2,506	5,163.75	6,364
Totals.....	5	28,436	32,664	41,861	27,412	35,412.50	28,081
<i>From west coast of South America to east coast of Mexico:</i>							
British.....	1	4,645	5,311	7,270	4,513	3,823.92	.....
Norwegian.....	1	4,418	5,043	6,987	4,422	3,630.98	.....
Totals.....	2	9,063	10,354	14,257	8,935	7,454.88	.....
<i>From Far East to east coast of United States:</i>							
United States.....	3	12,197	17,190	19,674	12,139	15,246.25	19,950
<i>From Central America to Europe:</i>							
German.....	2	2,931	4,323	5,034	2,945	3,663.75	1,841
British.....	1	763	871	1,561	809	953.75	743
Totals.....	3	3,694	5,194	6,595	3,754	4,617.50	2,589
<i>From Central America to Cristobal, C. Z.:</i>							
British.....	2	1,495	1,724	2,618	1,544	1,868.75	2,214
United States.....	1	1,862	2,206	3,169	1,862	2,327.50	1,625
Totals.....	3	3,357	3,930	5,787	3,406	4,196.25	3,839
<i>From Balboa, C. Z., to east coast of Mexico:</i>							
British.....	1	3,255	3,714	5,631	3,230	2,674.08	.....
United States.....	1	3,051	3,519	5,073	3,026	2,533.68	.....
Totals.....	2	6,306	7,233	10,704	6,256	5,207.76	.....
<i>From west coast of Canada to east coast of Mexico:</i>							
British.....	1	8,029	8,130	10,397	7,725	6,021.75	.....
<i>From west coast of United States to east coast of Mexico:</i>							
United States.....	1	5,140	6,050	8,207	5,091	4,356.00	.....
<i>From Australasia to east coast of United States:</i>							
British.....	1	4,188	6,216	6,804	4,276	5,235.00	9,200
<i>From Australasia to east coast of Canada:</i>							
British.....	1	3,552	4,070	5,758	3,549	4,440.00	2,600
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,522	4,914	5,652	3,522	4,402.50	800
<i>From Far East to Europe:</i>							
British.....	1	2,704	4,404	4,418	2,684	3,380.00	6,500
<i>Mexican coastwise:</i>							
French.....	1	2,155	2,096	2,953	1,880	1,616.25	.....
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	324
<i>Miscellaneous:</i>							
British.....	1	(^a)	(^a)	(^a)	(^a)	5,489.00	.....
Totals, February, 1922	98	315,731	398,530	499,713	315,169	383,332.77	359,240
Totals, January, 1922	85	272,508	332,752	423,469	271,229	331,510.93	313,707
Totals, February, 1921	127	401,498	481,605	623,181	397,058	467,796.20	478,032

^a Cruiser.^a 10,978 tons displacement.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended March 6:

Steamships *Corinthic*, dismantle, repair, reassemble, and test out steering engine; *Hwah Ping*, renew 2 pieces of copper pipe; *Buckeye State*, manufacture 100 taper flue plugs; *La Habra*, dock and undock; stage and clean; paint bottom 1 coat of anticorrosive and 1 coat of antifouling (paint furnished by ship); repair main engine; jack up furnace, No. 4 boiler; manufacture miscellaneous parts for oil-burning system; repair ammonia compressor, Worthington pump, Weir feed pump; manufacture miscellaneous lot of chisels; overhaul, grind in, and put in good condition all boiler valves; calk leaky rivets and install tap bolts in shell; renew defective parts of

pipe lines for ice machine, fire line, and bunker pipe line; re-cement around propeller nut; renew zinc plates on hull; *Rakuyo Maru*, dismantle; make temporary repairs to gear on steering engine; straighten arm; reassemble and test out steering gear; *Hawkeye State*, furnish laborers and supervision to clean out boilers and repair bearings on No. 1 generator; realign to turbine engine and install spare bearings on No. 2 generator.

PREVIOUSLY REPORTED.

Tug *Gorgona*, dock and undock; stage and clean; chip and paint bottom; draw tail shaft and miscellaneous repairs to ship's operating gear; steamship *Advance*, dock and undock; stage and clean; paint bottom and miscellaneous running repairs; barge *No. 135*, straighten coaming; tighten bad order rivets; drill barge *L-55*, remove from water and place on dock; remove copper sheathing in spots for examination of hull.

The following vessels were at the Cristobal shops for repairs during the week ended March 6:

Steamships *Macoris*, repair No. 2 winch; repair 1 steam and 1 ammonia valve for ice machine; *Panama*, manufacture new packing box for H. P. piston rod; manufacture new H. P. rod, bull ring, follower, and bolts; repair hull on lifeboats and motor boat; make pins for blocks; straighten stanchion; repair hose reel; *Almagro*, prepare P. C. closed chocks for installation; *Salvador*, manufacture 12 cylinder cover studs, 2 compressor rods, 2 oil tank cocks, 2 blow-down valves, 4 winch stop valves, etc.; overhaul locks and keys on specie room; U. S. M. P. *Nones, Jr.*, rebrick boiler front; renew docking shoe; renew stem band and wooden stem, etc.; steamship *Sorato*, manufacture 2 tube stoppers; barges *Nos. 2 and 21*, renew deck plating as directed; steamship *Loch Katrine*, repair copper pipe; supply boat *No. 1*, manufacture valve and gaskets; steamships *Tolosa*, *Tregantle*, and *Aysen*, minor repairs.

Commercial Traffic by Nationality of Vessels, Calendar Year 1921.

The aggregate number and tonnage of commercial vessels of various nationalities passing through the Panama Canal during the calendar year 1921, and the total of tolls paid and cargo carried by them, are summarized in this table:

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
Brazilian.....	1	3,511	4,566	5,472	3,523	\$4,388.75	6,700
British.....	975	3,213,154	3,955,960	5,008,787	3,141,154	3,907,157.75	3,440,406
Chilean.....	47	73,235	119,157	139,649	82,964	108,650.50	38,682
Costa Rican.....	5	601	626	660	390	597.63	471
Danish.....	66	236,902	287,474	347,772	231,579	285,781.20	353,946
Dutch.....	64	220,244	300,285	339,003	218,748	267,577.87	271,968
Finnish.....	2	4,293	4,281	4,620	4,361	5,137.20	7,101
French.....	45	146,870	160,767	214,958	136,612	181,343.22	118,457
German.....	13	24,890	30,905	39,006	23,566	30,870.85	30,951
Greek.....	5	17,082	18,618	21,443	13,117	19,293.40	11,956
Italian.....	22	69,269	85,180	118,411	71,460	88,470.35	37,541
Japanese.....	197	789,122	889,144	1,168,865	774,627	969,315.65	981,295
Mexican.....	6	2,528	2,742	4,429	2,370	2,888.65	3,795
Norwegian.....	139	426,584	509,875	648,999	413,491	486,371.82	533,714
Panamanian.....	6	1,473	1,495	1,960	1,466	1,626.05	2,026
Peruvian.....	58	81,944	155,960	245,787	129,644	101,318.74	78,119
Russian.....	4	9,725	11,279	15,844	8,641	12,156.25	11,343
Spanish.....	18	44,914	52,983	67,656	43,281	58,935.24	69,039
Swedish.....	32	97,540	146,708	152,729	115,866	120,534.85	153,587
United States.....	1,078	3,839,806	4,697,806	5,905,780	3,808,659	4,608,682.83	4,555,908
Totals.....	2,783	9,303,687	11,435,811	14,451,830	9,225,519	11,261,098.80	10,707,005

A comparison of the cargo statistics with the corresponding figures for the calendar year 1920 shows that the total amount of cargo handled through the Panama Canal in 1921 declined $4\frac{1}{2}$ per cent. Cargo transported in American bottoms declined 17 per cent; French, 10 per cent; Spanish, 55 per cent; Peruvian, 34 per cent, and Chilean, 57 per cent. Cargo transported in British bottoms increased 4 per cent; Danish, 124 per cent; Dutch, 95 per cent; Swedish, 66 per cent; Norwegian, $9\frac{1}{2}$ per cent; and Japanese, 28 per cent.

Official Circular.

Grass Fires.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., March 1, 1922.

To all concerned—Recently several small fires which started alongside the main road between Pedro Miguel and Gamboa on the east side, and Pedro Miguel and Culebra on the west side of the Canal, spread to adjoining cattle pastures and caused considerable damage to the pastures and necessitated a large amount of work to protect the cattle and get the fire under control.

It is directed that anyone having occasion to use the interior roads in the Canal Zone be careful not to start any grass fires by throwing lighted cigars, cigarettes, or matches into the dry grass along the highways.

M. L. WALKER, *Acting Governor.*

Sale of Tugboat "Empire."

Sealed bids in triplicate will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., and also at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, not later than 10.30 a. m. on the 17th day of April, 1922, at which time they will be opened in public simultaneously in both offices, for the purchase of the seagoing tugboat *Empire*, 120 feet over-all length, located at Balboa, Canal Zone. Detailed information with photographs, if desired, and form of proposal (Circular No. 1471) may be had upon application to the offices of the General Purchasing Officer or the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids in its discretion.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bulkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa.

For coal in large quantities as specified below, taken from alongside Cristobal Coaling Plant by vessels transiting the Canal:

- (a) To vessels taking 1,200 tons or over;
(b) To vessels taking between 825 and 1,200 tons and bunkering full;
(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10.

- (d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at \$10 per ton of 2,240 pounds.

- (e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at \$10 per ton.

- (f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

- (g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 4 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

Certificate.

By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 395.

PORT OF CRISTOBAL—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Mar. 3	Norman Bridge.	Pan-American Petroleum Co.	Tampico.	Mar. 4	Macoris.	French Line	Havre via wayports.
Mar. 4	Coronado	Elders & Fyffes, Ltd.	Port Limon.	Mar. 4	Empress of Britain.	Canadian Pacific Line.	New York via wayports.
Mar. 4	James Timpson.	Bluefields Fruit Co.	New York via wayports. High seas.	Mar. 4	Tolosa.	United Fruit Co.	New York via wayports.
				Mar. 4	Coronado	Elders & Fyffes Line	Kingsdon.
				Mar. 4	Norman Bridge	Pan-American Petroleum Co.	Tampico.
PORT OF BALBOA.							
Feb. 26.	Hwah Ping.	Chinese Government.	Callao.	Feb. 28	Hwah Ping.	Chinese Government.	Hongkong.
Mar. 2	Birmingham "	United States Navy.	San Diego.	Mar. 4	Rakuyo Maru.	Toyo Kisen Kaisha.	Valparaiso.
Mar. 2	Rakuyo Maru.	Toyo Kisen Kaisha.	Hongkong.				

* Other than ships passing through the Canal.

or Cruiser.

THE PANAMA CANAL RECORD

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Volume XV.

Balboa Heights, C. Z., March 15, 1922.

No. 31.

Projects for Increasing the Dry Season Water Supply.

An investigation was made in February by the Chief Hydrographer and the Chief of Section of Surveys of the practicability of diverting into Gatun Lake the Indio River, which flows into the Caribbean about 20 miles west of the mouth of the Chagres. The project was found to be impracticable, primarily because of the lack of a suitable dam site on the Indio below its junction with the Rio Esterial, which runs between the upper reaches of the Indio and the watershed of the lake. The Esterial has about half the flow of the Indio and is not large enough to justify the cost of diverting it into the lake.

Diversion of the Indio into Gatun Lake was considered for the purpose of increasing the supply of water during the dry season. Alternative projects being considered by the Canal administration are the construction of a supplementary reservoir above Alhajuela, on the Chagres River beyond the limits of the lake, and of a dam west of Pedro Miguel Lock to incorporate within the lake area a part of the Rio Grande valley above Miraflores Lake. The Alhajuela project would give an additional storage of between 15 and 30 billion cubic feet (the present dry season storage between the 87- and 80-foot levels is 31.95 billion cubic feet) and would also furnish power for electrical development. The Pedro Miguel project, by decreasing the surges in Gaillard Cut resulting from drafts of water for lockages at Pedro Miguel, should make it possible to raise the maximum elevation to 88 feet and give an additional half foot available depth at low stages of the lake, which would increase the storage range from the present 7 feet to 8½ feet, or add about 6.7 billion cubic feet to the storage.

Decision has not been made as to which project, if either, will be recommended to Congress. Under present operating conditions there is no danger of a shortage which would interfere with traffic. Consideration of the extension of the water supply is with an eye to the future.

Cuban Sugar to the Far East.

The steamship *Lord Sefton*, operated by the Universal Steam Navigation Company, passed through the Canal on March 5 with a cargo of 5,000 tons of sugar, from Nuevitas, Cuba, for Hongkong. On February 20 the *Cape Ortegale* made the transit with 7,400 tons shipped from Cuba to Japan.

During the calendar year 1921, 92,791 tons of sugar from the West Indies passed through the Canal, along with 250 tons shipped from the east coast of the United States. Of the total of 93,041 tons, 43,880 tons were shipped to the Far East, 26,140 tons to Australasia, and 22,741 tons to the west coast of Canada; 220 tons were shipped to the west coast of the United States and 60 tons to the west coast of South America.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, March 11, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Cuba	23	15 31	5	6 16	5	14 37	5	16 53	British	Pacific Steam Navigation Co.	246 0	35 0	17 0	Cristobal	Champerico.	General	1,119	1,589	1,018
Lombardia	4	14 02	5	6 32	5	14 52	5	16 03	British	Swedish Lloyd	475 0	41 0	18 10	New Orleans	Guayaquil.	General	2,129	2,359	1,399
Lochkatrine.	4	16 48	5	7 32	5	15 50	5	17 02	Swedish	Royal Mail Steam Packet Co.	281 0	62 3	27 7	London	Vancouver	General	9,346	10,352	7,585
Texas	5	3 21	5	8 25	5	16 52	5	19 46	American	United American Lines	471 0	57 9	23 0	Philadelphia	Los Angeles	General	3,104	4,154	3,033
Bransberg	5	6 30	5	9 10	5	18 07	5	19 27	Norwegian	A. S. Borgestad	345 0	49 6	24 0	Cardiff	Vancouver	Sugar	4,806	4,263	3,042
Argyll	5	6 35	5	9 18	5	18 04	5	19 27	French	French Line	320 8	40 7	23 0	Tampico	Santa Rosalia	Fuel oil	3,800	3,141	2,096
Stanley Dollar	5	5 16	5	10 05	5	19 28	5	20 48	American	Dollar Steamship Line	288 8	44 6	21 6	New York	Vancouver	General	3,600	3,460	2,404
Lord Sifton.	5	6 43	5	11 20	5	19 35	5	21 39	British	Occidental and Oriental S. N. Co.	374 0	48 0	23 7	Nuevitas	Hongkong	Sugar	5,000	4,631	3,434
Ansel to San																			
Giorgio III.	4	20 00	6	6 12	6	13 08	6	20 30	Italian	Italian Line	392 6	51 0	16 7	Genoa	Valparaiso	General	1,400	5,907	4,310
City of Pekin	5	18 05	6	7 15	6	14 51	6	15 50	British	Ellerman Lines Ltd.	442 0	58 0	28 3	New Orleans	Shanghai	General	9,155	9,048	6,846
Lompe	6	7 39	6	8 29	6	16 05	6	17 33	British	C. T. Bowring & Co.	435 0	55 9	26 0	Tampico	Iquique	Fuel oil	9,600	7,496	5,311
Willaro	6	9 54	6	10 10	6	17 07	6	19 08	American	Williams Line	386 0	52 0	19 0	New York	Los Angeles	General	4,300	5,080	4,102
Jalden	6	16 03	7	6 10	7	14 30	7	15 40	American	Barber Line (S. B.)	410 5	54 2	27 3	New York	Far East	General	8,398	7,496	5,086
Steel Ranger	6	19 02	7	8 50	7	15 13	7	16 20	American	United States Steel Products Co.	424 2	56 2	27 10	Baltimore	Seattle	(*)	8,626	7,539	5,448
Karamea	7	6 32	7	8 50	7	16 26	7	17 20	British	Shaw, Saville & Albion Co.	478 0	63 0	22 0	Cardiff	Wellington	Ballast	11,070	7,931	
West Ira	7	9 40	7	10 00	7	17 50	8	8 33	American	Tampa Intercoastal S. S. Co. (S. B.)	410 0	54 0	25 0	Galveston	Kobe	General	6,000	6,755	4,892
Santa Ana	6	6 55	7	12 00	7	18 35	8	19 45	American	W. R. Grace & Co.	360 2	51 5	22 0	New York	San Francisco	General	1,022	5,776	4,081
Aysen	3	13 55	8	6 13	8	12 56	8	14 00	Chilean	Chilean Line	379 6	44 3	21 4	Cristobal	Valparaiso	General	626	4,535	3,068
Santa Luisa	7	18 04	8	7 35	8	13 59	8	18 00	American	W. R. Grace & Co.	360 2	51 6	20 7	New York	Talcahuano	General	1,908	5,694	3,975
Regulus	3	11 12	8	7 25	8	15 27	8	16 28	Norwegian	A. O. Lindvig	341 6	48 2	21 0	Barry	Honolulu	Coal	4,833	4,331	3,269
Edward Luck-																			
enbach																			
Vestalia	8	7 15	8	8 50	8	16 30	8	17 30	American	Luckenbach Line	456 0	57 0	25 0	Philadelphia	Los Angeles	General	5,760	8,543	6,427
City of Win-	8	22 18	9	6 45	9	16 14	9	17 20	British	Gow Harrison & Co.	423 4	56 0	25 0	New York	Valparaiso	Coal	6,885	6,193	4,412
chester	9	8 45	9	9 05	9	18 39	9	19 45	British	Hall Steamship Line	456 1	57 0	24 6	New York	Auckland	General	5,723	8,783	6,603
Delacra Maru.	9	20 42	10	6 25	10	13 58	12	6 20	Japanese	Nippon Yusen Kaisha	420 0	56 0	28 4	New York	Shanghai	(*)	7,341	7,249	5,171
Felix Tausatz.	10	4 58	10	7 45	10	16 25	10	17 25	American	Crowell & Thurlow	395 0	55 0	26 0	Baltimore	Los Angeles	General	5,790	6,529	4,472
Grace Dollar.	9	18 10	9	9 05	10	17 22	10	18 17	British	Canadian Robert Dollar Line	412 4	55 8	27 5	New York	Singapore	General	8,832	7,118	5,196
Trematon.	10	14 54	11	7 30	11	17 10	11	18 05	British	Hain Steamship Co.	400 1	52 3	24 0	Cardiff	Wellington	Coal	6,040	5,778	4,033
Maple Branch.	11	3 08	11	7 07	11	17 11	11	18 05	British	F. and W. Risdon	400 0	52 0	20 0	London	Guayaquil	General	1,920	5,618	4,116
San Juan	6	15 45	11	9 20	11	17 11	12	9 20	American	Pacific Mail Steamship Co.	283 0	37 0	16 7	Cristobal	San Francisco	General	641	2,379	1,593
Richmond	6	15 43	11	12 29	11	19 32	12	9 20	American	McAllister Brothers (S. B.)	435 0	56 0	24 10	Texas City	Balboa	Oil	8,000	7,642	5,327
Tydeus	11	7 00	11	13 05	11	20 47	11	21 54	British	Ocean Steamship Co.	450 0	54 1	27 6	New York	Yokohama	General and iron	7,373	7,578	5,517

* Tin plates, steel, and general.

* Tin plates, textile machinery, lubricating oil, copper, general, and sulphate of ammonia.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

North American Laura C. Hall ¹ Wyeville Arawa Hualtaga Nyanza San Juan Acajutla San Tiso Grados Ortega S. Grove Henry S. Grove Rimutaka Scotia ¹ Manavi Patuxent ⁴ Colombia Memnon Australen ¹ Saint Joseph Nereus ¹ Jamaica La Brea Haarlem Westmeath Selma City Acadir La Habra William A. Mc- Kenney	4 3 4 5 5 6 6 6 7 7 7 2-13 8 9 9 9 9 9 9 2-26 10 10 10 10 11 11 3 11	18 30 23 40 21 00 5 40 6 00 22 30 2 00 7 00 6 15 7 00 7 00 10 30 13 42 14 00 3 15 5 20 14 25 11 30 23 30 22 30 11 55 10 11 14 30 19 00 4 30 7 00 0 05	5 5 5 5 5 5 6 6 7 7 7 8 8 9 9 9 9 9 9 10 10 10 10 11 11 0 11	6 42 6 21 7 50 9 01 10 45 11 35 8 05 8 11 7 33 7 05 7 30 6 46 7 08 6 53 8 52 9 13 15 08 6 58 7 47 8 59 13 26 6 51 7 50 11 07 9 26 11 01 11 46	5 14 00 5 15 15 5 14 52 5 16 25 5 17 55 5 19 05 6 15 41 6 15 18 7 15 00 8 15 00 7 16 35 7 17 25 8 14 20 9 14 04 10 20 26 10 14 11 10 14 11 15 50 12 10 13 50 16 25 17 40 18 30 11 01 19 30	British British American British Peruvian American American British Norwegian British British British American American British British British American American British Dutch British American British British Norwegian	North American Steamship Co. Pacific Metals Corp. Barber Line (S. B.) Shaw, Saville & Albion Co. Peruvian Line Moore & McCormick (S. B.) Pacific Mail Steamship Co. Pacific Steam Navigation Co. Eagle Oil Transport Co. Thos. Thorsen Pacific Steam Navigation Co. Atl. Gulf & Pacific S. S. Co. (S. B.) New Zealand Shipping Co. United States Navy Pacific Steam Navigation Co. Pacific Mail Steamship Co. Alfred Holt & Co. East Asiatic Co. French Line United States Navy Pacific Steam Navigation Co. Union Oil Co. Royal Netherlands W. I. Mail. Union Steamship Co. United States Steel Products Co. Pacific Steam Navigation Co. Wilhelm Wilhelmsen.	251.0 81.0 395.5 460.0 360.0 406.7 283.0 215.7 420.6 254.2 465.3 404.6 457.0 149.0 156.0 380.0 390.0 410.0 397.9 522.0 220.0 435.0 361.2 475.0 424.2 285.0 424.8	43 6 26 0 55 0 60 0 44 7 55 2 37 0 33 5 54 6 39 2 56 3 53 9 58 2 30 0 24 0 48 7 49 0 55 2 51 0 67 0 34 0 56 2 49 8 56 0 41 3 57 0	20 2 9 0 21 0 24 6 23 6 23 6 18 0 16 6 22 6 14 0 21 8 25 6 22 4 12 6 12 6 22 6 24 5 18 6 10 4 19 5 20 0 16 25 12 30 12 30 19 30	San Antonio. Buenaventura. Shanghai Auckland Callao Seattle San Francisco Champerico. Iquique Guayaquil Valparaiso Portland. Dunedin. Balboa Guayaquil. Sea San Francisco Puget Sound Corral Vancouver. San Diego Tumaco San Francisco Talcahuano Wellington. Avenmouth New York Valparaiso Tocopilla Everett.	New York Cristobal. New Orleans London Cristobal. New York Cristobal Cristobal Tampico New York Liverpool Philadelphia. London Cristobal Cristobal Cristobal New York General General General Bordeaux Hampton Rds. Pto. Colombia Tampico Amsterdam Cold storage, gen. Avenmouth New York Liverpool Tampico. Boston.	General Coffee General Cold storage, gen. General Lumber, general Coffee, general Coffee, etc. Ballast. Coffee, cocoa. General (⁶) Cold storage, gen. General General General General Navy stores General Ballast. General Cold storage, gen. Lumber, general General Ballast. Lumber	3,274 26 4,793 7,000 1,042 5,761 1,838 1,038 757 3,007 5,400 4,650 254 2,960 5,705 7,511 6,248 15 74 1,187 4,100 7,150 6,000 7,539 2,871 1,093 7,053 6,532	2,444 132 6,841 10,035 4,514 6,240 2,379 1,273 2,036 8,345 5,735 9,159 1,337 6,015 5,450 7,027 5,979 1,187 4,759 3,660 7,539 2,871 1,093 7,053 6,532	1,571 72 4,758 7,504 2,386 4,434 1,593 706 1,457 4,998 4,688 884 4,281 3,459 5,338 4,170 622 4,765 3,660 5,448 1,826 5,051 4,528
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* Motor ship.

* Tug.

* Collier.

* Coffee, wheat, oil and lead.

* Coffee, cotton seed, and general.

PORT OF CRISTOBAL.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
Mar. 5	Atenas	United Fruit Co.	Mar. 5	Atenas	United Fruit Co.
Mar. 5	Sorata	Pacific Steam Navigation Co.	Mar. 5	James Timpson	The Resolved Corp.
Mar. 6	Heredia	United Fruit Co.	Mar. 7	Panama	Panama Railroad Steamship Line.
Mar. 6	Advance	Panama Railroad Steamship Line.	Mar. 7	Sorata	Pacific Steam Navigation Co.
Mar. 6	Stuyvesant	Royal Netherlands W. I. Mail	Mar. 7	Stuyvesant	Royal Netherlands W. I. Mail
Mar. 7	Killerig ⁴	Lindsay, Swann & Hunter	Mar. 8	Killerig ⁴	Lindsay, Swann & Hunter
					Bocas del Toro.
					New Orleans.
					New York via Haiti.
					Kingson.
					Port Limon.
					Cartagena.

(Continued on page 408, column 2.)

Executive Order.—Crew Lists.**Amending Further the Provisions of the Executive Order of August 8, 1918, Concerning Travel Between the United States and Neighboring Countries, and Authorizing the Requirement of Crew Lists.**

By virtue of the authority vested in me by the Act of Congress¹ approved the twenty-second day of May, one thousand, nine hundred and eighteen, entitled "An Act to Prevent in Time of War Departure from and Entry into the United States Contrary to the Public Safety," and with reference to the Presidential Proclamation² and Executive Order³ of August eight, one thousand, nine hundred and eighteen, adopted in pursuance thereof, and the Act of Congress of March 2, 1921, entitled, "An Act making appropriations for the Diplomatic and Consular Service for the fiscal year ending June 30, 1922," I hereby prescribe the following amendments to said Executive Order:

* * * * *

II.

1. Masters of vessels of all nationalities sailing for a port of the United States of America or of any of its possessions, except the Panama Canal Zone, must submit for visa a list containing the names of all the alien members of the vessel's crew to the American consular officer at the port from which the vessel commences its voyage. If there is no American consular officer stationed at that port, the crew list should be submitted at the first port of call (if the vessel touches at any other port) where an American consular officer is located. This does not refer to consular agents, who are not authorized to visa crew lists.

2. When a vessel sails from a port where no American Consul is stationed, but which is so near to an American Consulate that unreasonable delay and serious loss would not result from referring the crew list to such Consulate, it should be referred thereto for visa.

3. The visaed crew list must be presented to an officer of the immigration service upon the arrival of the vessel at a port of the United States, before any alien member of the crew can be allowed to land.

4. If an alien seaman whose name is not included in a visaed crew list arrives at a port of the United States he shall not be allowed to land except upon the permission of the Secretary of State.

This order replaces the Order (No. 3505) of June 25, 1921,⁴ "Amending the Provisions of the Executive Order of August 8, 1918,³ concerning Travel between the United States and Neighboring Countries, and Authorizing the Requirement of Crew Lists."

WARREN G. HARDING.

THE WHITE HOUSE,
February 1, 1922.

¹Published as Panama Canal Circular No. 600-49.

²Published as Panama Canal Circular No. 601-79.

³Published as Panama Canal Circular No. 601-80.

⁴Published as Panama Canal Circular No. 601-123.

The Executive Order above, dated February 1, 1922, has been published as Panama Canal Circular No. 601-129.

Note Concerning Executive Order of February 1, 1922, on Crew Lists.

The purpose of the above order is presumably to assist in the enforcement of the immigration laws of the United States. The specific exemption of the Canal Zone ports in paragraph 1 of Section II makes the order inapplicable to vessels bound for Canal Zone ports or for passage through the Canal except as they may also be on their way to other United States ports, in which case the immigration officers at those ports will see to the compliance with the order. Names of aliens who ship in ports of the Canal Zone on vessels sailing therefrom to the ports of the continental United States or its insular possessions must appear on crew lists visaed by consular officers of the United States at Panama City or Colon, or by the Shipping Commissioner, or Deputy Shipping Commissioner of the Canal Zone, in accordance

with requirements of Executive Order of October 18, 1921, published as Panama Canal Circular No. 601-125.

The order of February 1, 1922, does not change the requirements of The Panama Canal of 2 copies of a complete crew list, Americans as well as aliens (Form 1509), as set forth in Notice to Steamship Lines issued by the Governor under date of October 22, 1919.

Notice to Mariners.—Aids to Mariners—Buenaventura Harbor.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., March 9, 1922.

Five Swedish buoys have been established at Buenaventura in following positions, which must be taken as approximate, bearing having been taken after sunset:

No. 1 Buoy, showing a white flash every 3 seconds, about $1\frac{1}{2}$ miles south of Vigia de San Pablo in 4 fathoms, with Culo de Barca bearing N. 42° W., distant $2\frac{1}{2}$ miles.

No. 2 Buoy, showing red flash every 3 seconds, about 4 cables north of Soldado Point in 10 fathoms.

No. 3 Buoy, showing a white flash every 3 seconds, on the 3-fathom patch, with Limones Point bearing N. 77° E., distant $1\frac{1}{4}$ miles.

No. 4 Buoy, showing a white flash every 3 seconds on to Tomes Shoals, replacing the boiler buoy which formerly existed.

No. 5 Buoy, showing a red flash every 3 seconds on edge of mud flats off the town and about 4 cables distant from the new mole bearing N. 30° E., to be kept on starboard hand when entering and on port hand, leaving.

All bearings are magnetic. Buoys were established March 6, and are painted red. The white lights are visible about 8 miles and red lights about 6 miles.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the week ended March 13:

Motor ship *Laura C. Hall*, clean and paint bottom; straighten tail shafts and fit new propellers; rebabbitt strut bearings; renew railing and planking as directed, etc.; tugs *Tavernilla*, connect up dynamo; renew gaskets in all deckhouse doors; repair pipe, etc.; *Favorite*, manufacture and install new rudder; repair dynamo and brake band on after winch; repair hull on launch, etc.; steamships *Advance*, renew rods on feed and sanitary pumps; manufacture dynamo crosshead bushings; plane crosshead; braze expansion band; build foundation for anchor, etc.; *Acajutla*, turn up feed pump rams; fit cylinder to winch; repair Venetian windows; repair and rebrick galley range; overhaul sanitary piping; renew steering chain links; calk main deck; renew part of superstructure deck; *Rimutaka*, manufacture new condenser circulating pipe; *Manavi*, install glass on port and side light; repair accommodation ladder, No. 2 starboard derrick, and between deck hatches; repair specie room door and hot water tank in pantry; *Achilles*, remetal 1 set of M. P. crank-pin brasses; repair steam heating system; clean boilers; clear scuppers; repair stanchions and railings on forecastle deck; paint boot topping, etc.; *Gen. G. W. Goethals*, calk passenger deck; repair fire line; turn up H. P. bull ring and manufacture 8 snap rings, etc.; *Columbia*, *Heredia*, *Jamaica*, *Thomas L. Wand*, *St. Joseph*, *U. S. S. Galveston*, U. S. mine planter *Graham*, barge *Darien*, launch *Gold Star*, minor repairs.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending March 11, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Cauca.....	Pacific Steam Navigation Co.....	March 5.....	March 5.....		2
Santa Ana.....	Pacific Mail Steamship Co.....	March 7.....	March 8.....	13	3
Manavi.....	Pacific Steam Navigation Co.....	March 8.....	March 9.....	17	
Colombia.....	Pacific Mail Steamship Co.....	March 9.....	March 9.....	15	
Jamaica.....	Pacific Steam Navigation Co.....	March 10.....	March 10.....	1	
San Juan.....	Pacific Mail Steamship Co.....	March 11.....			26
La Brea.....	Union Oil Company of California..	March 9.....	March 11.....	181	

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending March 11, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Bologna.	Italian Line.		February 26.		1,215½
Ares.	Royal Netherlands W. I. Mail.		February 27.		15
Zacapa.	United Fruit Co.	February 26.	February 27.	(¹)	60
Norwegian.	Leyland Line.	February 26.	February 28.	578	267
Urubamba.	Peruvian Line.		February 28.		599
Santa Teresa.	Grace Line.	February 27.	February 27.	(¹)	117
Cartago.	United Fruit Co.	February 27.	February 27.	1,438	² 1
Jamaica.	Pacific Steam Navigation Co.	February 27.	February 28.	40½	178
Cliona.	Anglo-Saxon Petroleum Co.	February 28.	March 1.	7,300	(¹)
Venezuela.	Royal Netherlands W. I. Mail.	February 28.	March 1.	(¹)	1,628
Theben.	Kosmos Line.	February 28.	March 2.	205	(¹)
Macoris.	French Line.	February 28.	March 4.	123	91
San Gil.	United Fruit Co.	March 1.	March 1.	20	108
Panama.	Panama Railroad Steamship Line.	March 1.		2,071	
Occidental.	Texas Oil Co.	March 1.	March 2.	8,037	(¹)
Salvador.	Pacific Steam Navigation Co.	March 1.	March 3.	212	(¹)
Zacapa.	United Fruit Co.	March 2.	March 2.	(¹)	7
Norman Bridge.	Huasteca Petroleum Co.	March 3.	March 4.	6,000	(¹)
Helder.	Royal Netherlands W. I. Mail.	March 3.	March 4.	222	14
Montana.	French Line.	March 3.	March 4.	23	83
Aysen.	Chilean Line.	March 3.		64	
Tolosa.	United Fruit Co.	March 3.	March 4.	276	¹
Almagro.	Pacific Steam Navigation Co.	March 3.	March 4.	133	114
Lochkatrine.	Pacific Steam Navigation Co.	March 4.	March 4.	57	
Gen. O. H. Ernst.	Panama Railroad Steamship Line.	March 4.		293	
Coronado.	Elders & Fyffes, Ltd.	March 4.	March 4.	10½	1
Lochkatrine.	Pacific Steam Navigation Co.		March 5.		44
Atenas.	United Fruit Co.	March 5.	March 5.	(¹)	105
Huallaga.	Peruvian Line.	March 5.		1,042	
Laura C. Hall.	Pacific Metals Corporation.	March 5.		26	
Sorata.	Pacific Steam Navigation Co.	March 5.	March 7.	52	540
Panama.	Panama Railroad Steamship Line.		March 7.		2,070
Acajutla.	Pacific Steam Navigation Co.	March 6.	March 7.	1,038	
Santa Ana.	Pacific Mail Steamship Co.	March 6.	March 7.	206	436
Heredia.	United Fruit Co.	March 6.	March 8.	1,027	375½
Aysen.	Chilean Line.		March 8.		626
Advance.	Panama Railroad Steamship Line.	March 6.	March 11.	750	118
San Juan.	Pacific Mail Steamship Co.	March 6.	March 11.	1,841	642
Stuyvesant.	Royal Netherlands W. I. Mail.	March 7.	March 8.	82	(¹)
Ortega.	Pacific Steam Navigation Co.	March 7.	March 7.	34	(¹)
Manavi.	Pacific Steam Navigation Co.	March 9.		254	
Atenas.	United Fruit Co.	March 9.	March 9.	1	¹
Colombia.	Pacific Mail Steamship Co.	March 9.	March 10.	617	379
Metapan.	United Fruit Co.	March 9.	March 10.	27	549
Calamares.	United Fruit Co.	March 10.	March 11.	360	338
Achilles.	Panama Railroad Steamship Line.	March 10.		12,462½	
Darien.	Panama Railroad Steamship Line.	March 10.		7,233	
Saint Joseph.	French Line.	March 10.		39	
Jamaica.	Pacific Steam Navigation Co.	March 10.		57	
Richconcal.	McAllister Bros.	March 11.	March 11.	1,200	(¹)
Stuyvesant.	Royal Netherlands W. I. Mail.	March 11.	March 11.	12	1,096
Gen. G. W. Goethals.	Panama Railroad Steamship Line.	March 11.		2,292	
San Benito.	United Fruit Co.	March 11.	March 11.	3	378

¹ No cargo discharged.

² Case.

³ No cargo laded.

Automobiles and Motorcycles.

The Chief of the Division of Civil Affairs has authorized the following:

At the end of December, 1921, there were 2,113 automobiles and trucks and 392 motorcycles licensed in the Canal Zone, as compared with 1,811 and 353, respectively, on December 31, 1920.

Automobile licenses are divided into 3 classes: For pleasure only; for hacking, or carrying passengers for hire; and for trucking. Of the 2,113 automobile and truck licenses, 658 were for official cars belonging to The Panama Canal, the Panama Railroad Company, and the United States Army and Navy, and 36 were reciprocal licenses for official cars belonging to the Republic of Panama, as compared with 623 and 28, respectively, on December 31, 1920. Of the 1,419 remaining, 556 were personal licenses, 100 hacking licenses, and 9 trucking licenses, issued to residents

of the Canal Zone, as compared with 450, 49, and 2, respectively, on December 31, 1920; 127 and 78 were reciprocal personal licenses issued to residents of Panama and Colon, respectively; and 424 and 125 were reciprocal commercial licenses issued to persons living in Panama and Colon, respectively.

The reciprocal automobile licenses of all classes in effect at the end of December, 1921, including official licenses, totaled 813, as compared with 687 on December 31, 1920. Of the 549 reciprocal commercial licenses above mentioned, 481 were for hacking, or carrying passengers for hire, and 68 for trucking.

Of the 392 motorcycle licenses, 223 were for official machines belonging to the United States, and 1 was a reciprocal license for an official machine belonging to the Republic of Panama. Of the 168 remaining, 146 were personal licenses issued to residents of the Canal Zone, 17 reciprocal personal licenses issued to residents of the city of Panama, and 5 reciprocal personal licenses issued to residents of Colon. On December 31, 1920, there were 353 motorcycles licensed in the Canal Zone, of which 203 were official licenses for machines owned by the United States. 1 was a reciprocal license for a machine owned by the Republic of Panama, 128 were personal licenses issued to residents of the Canal Zone, 13 reciprocal personal licenses issued to residents of the city of Panama, and 8 reciprocal licenses issued to residents of Colon.

Partial Eclipse of Sun, Visible on the Isthmus.

The Chief Hydrographer advises that there will be an annular eclipse of the sun at 6.20 a. m., approximately sunrise, on March 28, 1922. The sun will rise at about the middle of the period of partial eclipse, and will be completely out of the obstructed path at about 7.20 a. m.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective March 1, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.29
Bronze, Tobin, average.....	Lb.	.25
Gasoline, motor grade.....	Gal.	.40
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Pbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.675
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	1.04
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.55
Oil, kerosene, in drums.....	Gal.	.20
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.99
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.20
Paint, zinc, white, in oil.....	Lb.	.20
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.175
Waste, cotton, white.....	Lb.	.20

Scrap Burlap Bagging.

The Supply Department has on hand, available for sale, at the general storehouse, Balboa, a large quantity of scrap burlap bagging included in which are a quantity of clean but torn burlap bags.

This material is suitable for packing furniture, etc., and is offered at a price of 3 cents per pound put up in bales averaging 250 pounds each, or in smaller quantities if desired.

Arrangements for purchase should be made direct with the General Storekeeper, Balboa, C. Z.

Sale of Cattle.

Grade Holstein bull calves 1 to 3 months old from registered sires. Also grade Hereford and Durham bulls and heifers 6 months to 2 years old. Sales will be made upon first satisfactory offer. For further information inquire Superintendent, Cattle Industry, Room 269, Administration Building, Balboa Heights.

Invitation for Proposals for Furnishing Honey.

Sealed bids will be received in the office of General Manager, Commissary Division, Cristobal, until 4 p. m. March 20, and then opened, for supplying the Commissary Division with best grade extracted Panama honey, light color, put up in sealed milk bottles, pint size, cost of bottle to be included in bid, delivered at any retail commissary.

Bids should state fully the total quantity of honey which the bidder will be in position to supply monthly until further notice.

Offers will also be accepted for comb honey, bidder to indicate quantity of this item offered and likely to be available at the price quoted, and should state exact size and weight of comb.

For the information of bidders, Commissary Division requirements are estimated at 400 pints extracted honey, and 300 pounds comb honey per month. This is an estimate only, and the Commissary Division will not be bound in any way by these figures. Awards will be placed for greater or lesser quantities as the case may be, based on sales.

Bids must be inclosed in a sealed envelope, addressed to "General Manager, Commissary Division, Cristobal," and marked "Proposal for furnishing honey, to be opened March 21."

The Commissary Division reserves the right to reject any or all bids.

Sale of Tugboat "Empire."

Sealed bids in triplicate will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., and also at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, not later than 10.30 a. m. on the 17th day of April, 1922, at which time they will be opened in public simultaneously in both offices, for the purchase of the seagoing tugboat *Empire*, 120 feet over-all length, located at Balboa, Canal Zone. Detailed information with photographs, if desired, and form of proposal (Circular No. 1471) may be had upon application to the offices of the General Purchasing Officer or the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids in its discretion.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line), Pacific Mail Steamship Company, and Matson Line. The two last named charge \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10" dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Certificate.

By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 403.

PORT OF CRISTOBAL.—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
Mar. 8	Turrialba	United Fruit Co.	Colombian ports.	Mar. 9	Heredia	United Fruit Co.	New Orleans via Tola and Habana.
Mar. 9	Metapan	United Fruit Co.	New York via Kingston.	Mar. 9	Turrialba	United Fruit Co.	New York via Kingston.
Mar. 10	Atenas	United Fruit Co.	Bocas del Toro.	Mar. 9	Atenas	United Fruit Co.	New Orleans.
Mar. 11	Calameres	United Fruit Co.	New York via wayports.	Mar. 10	Metapan	United Fruit Co.	New York via wayports.
Mar. 11	Gen. G. W. Goodhall	Panama Railroad Steamship Line.	New York via Haiti.	Mar. 11	Calameres	United Fruit Co.	New York via wayports.
Mar. 11	San Benito	United Fruit Co.	Boston via wayports.	Mar. 11	San Benito	United Fruit Co.	Boston.
Mar. 11	Stuyvesant	Royal Netherlands W. I. Mail	Port Limon.	Mar. 11	Stuyvesant	Royal Netherlands W. I. Mail	Puerto Colombia.
				Mar. 11	Advance.	Panama Railroad Steamship Line	Puerto Colombia.
				PORT OF BALBOA.			
Mar. 9	Denver*	United States Navy	Corinto.				

* Other than ships passing through the Canal.

* Cruiser

THE PANAMA CANAL RECORD

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV. Balboa Heights, C. Z., March 22, 1922. No. 32.

Radio Pratique for Merchant Vessels.

The granting of pratique by radio to merchant vessels under certain conditions, authorized by Panama Canal Circular No. 626-10, dated February 17, 1922, has worked satisfactorily. The practice is in line with the policy of The Panama Canal of facilitating in every practicable way the prompt and easy dispatch of vessels, while maintaining the necessary safeguards. The quarantine restrictions and delays are kept to the minimum consistent with due regard for safety.

The conditions under which pratique is granted by radio are as set forth in the circular, which is reprinted below for ready reference:

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, February 17, 1922.

CIRCULAR NO. 626-10.

Radio Pratique for Merchant Vessels.

Hereafter, ships with clean bills of health, from noninfected ports, and without sickness on board, intending to transit the Canal without taking supplies or stores of any kind or landing passengers or cargo, may be granted pratique by radio under the following conditions:

- (a) By making application therefor by radio between the hours of 8 a. m. and 4 p. m. Such application to state:
 1. That the vessel has a clean bill of health and has no sickness on board.
 2. Names of ports and places visited within the past 10 days.
 3. That the vessel intends to transit the Canal without taking stores of any kind or landing passengers or cargo.
- (b) Radio will be addressed to Chief Quarantine Officer through Port Captain.
- (c) Pratique will not be considered as granted until reply has been received from Port Captain "Chief Quarantine Officer grants pratique."

M. L. WALKER.
Acting Governor.

Salvage of the "Garfield" Completed.

The steamer *Garfield*, aground in Galera de Zamba Bay, Colombia, since January 21, got clear at 3.45 p. m., March 13. The salvage steamer *Favorite* of The Panama Canal, which assisted in freeing the *Garfield*, brought her in tow to Cristobal, arriving there at 5 a. m., March 20. The *Garfield* was leaking and it may be necessary to put her in dry dock.

As told in THE PANAMA CANAL RECORD of March 8, the salvage operations were difficult, on account of the wide reach of shallows, where heavy seas, frequently rolling under a 50-mile gale, made work slow and hazardous. The *Garfield* traveled $1\frac{3}{4}$ miles through a series of bars, coming to a stop in 5 feet of water; and in order to get clear had to work back to clear water through the same obstructions, while most of the time heavy seas were pounding her. It is considered remarkable that she came through with such relatively little damage and without the loss of her cargo.

MOVEMENTS OF OCEAN VESSELS. Week ending at midnight, March 18, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Huacharo.	12	1 20	12	6 50	12	13 50	12	15 15	British.	Pacific Steam Navigation Co.	390	6	57	0	Valparaiso.	General.	3,502	5,905	4,391
Hanover.	11	17 00	12	7 35	12	16 29	12	17 45	American.	Tampa Intercean Co. (S. B.)	434	3	57	7	Shanghai.	General, case oil.	5,815	7,982	5,911
Taipei.	12	1 38	12	9 15	12	17 22	13	1 00	British.	Shaw, Saville & Albion Co.	477	8	61	1	Wellington.	General.	6,530	10,631	7,606
Canadian Const.	9	9 55	12	10 12	12	18 29	12	19 32	British.	Canadian Government.	430	0	56	0	Brisbane.	General, case oil.	6,000	7,680	5,494
George Washington.	12	10 50	12	11 10	12	19 30	13	11 15	Norwegian.	Peter Olsen.	425	0	55	3	San Francisco.	General.	8,180	7,505	5,627
Florence.	13	12 15	13	12 30	13	18 56	13	20 00	American.	Luckenbach Line.	401	0	53	0	Los Angeles.	General.	5,600	6,002	4,621
Ocean Prince.	13	7 45	14	6 24	14	13 48	14	15 10	British.	Rio Cape Line Ltd.	410	3	52	0	San Francisco.	Ballast.	5,926	4,252	
Port Decision.	13	22 20	14	7 13	14	14 32	14	16 30	British.	Commonwealth and Dom. Line.	480	4	60	0	Sydney.	General.	1,784	10,595	8,023
Yakura.	13	21 53	14	8 09	14	16 04	14	17 25	British.	Gow Harrison & Co.	414	0	56	0	Kobe.	Sugar.	7,383	6,101	4,358
Thomas L. Ward.	13	6 17	14	8 50	14	16 51	14	18 00	American.	J. C. Orden.	174	0	38	0	San Francisco.	Rosin.	2,700	733	436
Acelytha.	6	15 18	14	9 15	14	15 53	14	17 35	British.	Pacific Steam Navigation Co.	215	7	33	5	Champerico.	General.	513	1,273	708
American.	14	5 00	14	10 20	14	18 05	14	19 55	American.	American-Hawaiian Line.	406	8	51	1	Pertland.	General.	3,363	5,988	4,229
Hualala.	5	17 53	14	11 00	14	18 12	14	20 27	Peruvian.	Peruvian Line.	360	0	44	7	Callao.	General.	396	4,514	2,383
Mullala.	9	14 04	14	11 00	14	19 14	14	23 02	British.	Pacific Steam Navigation Co.	216	0	35	1	Guayaquil.	General.	91	1,357	884
S. C. 285.	10	7 00	15	6 55	15	14 52			American.	United States Navy.	352	0	52	0	Puerto Miguel.	Ballast.		4,290	3,683
Dart.	14	15 37	15	7 23	15	16 03	17	1 19	American.	Panama Railroad Steamship Line	385	0	51	0	Gaun Lake.	General.	6,700	9,045	4,561
Easton.	14	21 03	15	11 30	15	19 02	15	20 00	American.	U. S. & A. Line (S. B.)	395	6	50	0	Auckland.	General.	8,600	7,285	5,253
Steel Voyager.	15	10 20	15	12 30	15	20 05	15	21 05	American.	United States Steel Products Co.	436	6	57	2	Vancouver.	General.	5,750	8,543	6,402
Julia Luckenbach.	15	9 15	15	9 35	15	17 13	17	9 47	American.	Luckenbach Line.	410	5	54	3	San Francisco.	General.	7,731	6,583	4,950
West Niles.	16	9 15	16	9 35	16	17 13	17	9 47	American.	Pacific Steamship Co. (S. B.)	499	6	54	3	Vancouver.	Sugar.	6,731	6,583	4,950
West Haven.	16	11 23	16	11 45	16	19 10	16	20 19	American.	Atl. Gulf and Pac. S. S. Co. (S. B.)	499	6	54	3	Seattle.	General.	3,824	6,665	5,020
Cornwall.	16	10 03	17	6 15	17	13 48	17	15 15	British.	Federal Steam Navigation Co.	495	0	51	1	Albionmouth.	General.	6,598	11,766	7,873
Kikoku Maru.	16	15 17	17	7 17	17	16 30	17	18 40	Japanese.	Kawasaki Zosenka K. K.	385	0	51	0	Kobe.	General.	7,374	5,919	4,387
Oreus.	16	15 48	17	8 30	17	17 27	17	18 40	American.	Wessel Duval & Co. (S. B.)	380	0	51	0	Palta.	General, coal.	6,158	5,667	4,227
Borneo Maru.	17	9 15	17	9 49	17	18 25	17	21 07	Japanese.	Osaka Steam Kaisha	385	0	51	0	New Orleans.	General.	6,218	5,919	4,387
Point Judith.	17	18 15	17	12 52	17	19 38	17	21 37	American.	Pacific Mail Steamship Co.	289	0	44	0	Champerico.	General.	88	2,805	1,982
Vineola.	17	20 24	18	6 23	18	13 41	18	14 46	American.	W. R. Grace & Co.	298	6	50	0	San Francisco.	General.	2,352	2,835	1,845
Havo.	18	6 35	18	7 35	18	16 34	18	23 18	Norwegian.	Henrik Ottervoll	385	0	51	0	New Orleans.	Oil sugar.	5,752	5,210	3,755
Shunko Maru.	18	1 47	18	8 50	18	18 09	18	23 00	Japanese.	Osaka Steam Kaisha	425	0	53	0	San Francisco.	General.	8,211	6,923	5,304
Scipio.	18	12 14	18	11 14	18	17 49	18	18 56	Norwegian.	Thor. Thoreen.	254	8	39	2	New York.	General.	41	2,004	1,479
Wray Castle.	18	9 52	18	13 05	18	20 13	18	21 20	British.	Lancashire Shipping Co.	419	2	55	8	Manila.	General.	8,316	6,861	5,016

* Barrels.

* Barge.

* Steam schooner.

* Motor ship.

Galveston ¹	12	6.00	12	13.35	12	21.10	13	15.10	American	United States Government	308.4	44.5	16.1	Corinto	Boston	General	7,000	11,487	8,732
Lewis	11	16.00	13	6.29	13	14.12	13	14.12	American	Luckenbach Line	496.0	68.2	24.0	San Francisco	New York	General	7,000	11,487	8,732
Richeston	11	19.32	13	7.58	13	15.23	13	15.23	American	McAllister Bros. (S. B.)	436.0	50.0	18.4	Bahia	Tampico	Bahia	7,642	5,327	
Robin Gray	13	7.30	13	9.14	13	16.22	13	16.22	American	Robin Line Steamship Co.	424.8	52.5	16.6	Kahului, T. I.	Hampton Rds.	Fallast	7,472	5,661	
Port Chalmers	13	8.30	13	10.07	13	18.50	17	11.05	British	Commonwealth and Don. Line.	453.3	55.3	23.9	Auckland	London	Cold storage gen	5,339	8,264	5,863
Cold Harbor	13	12.10	13	13.03	13	22.51	13	22.51	American	N. Ad. & Western S. S. Co. (S. B.)	390.0	29.1	22.6	Seattle	Philadelphia	Lumber, general	5,501	6,131	4,418
Bahia	13	13.55	14	6.39	11	14.21	13	14.21	American	Colombian Maritime Co.	190.0	29.1	9.3	Buenaventura	Cristobal	General	64	737	335
Anzonan	13	20.10	14	7.47	11	16.15	15	6.12	American	American-Hawaiian Line.	470.1	57.0	28.7	Vancouver	London	General	12,000	9,158	6,970
Hudson	13	21.00	14	8.11	14	17.21	15	21.45	French	French Line	279.0	46.0	25.0	Valparaiso	La Havre	Copper, general	4,749	2,689	1,679
Point Judith	14	7.03	14	9.43	14	18.13	17	12.82	American	Pacific Mail Steamship Co.	289.0	44.1	21.6	San Francisco	Cristobal	Copper, general	3,979	2,895	1,982
Bahia	14	16.30	15	6.30	15	15.23	15	17.19	British	Pacific Steam Navigation Co.	400.1	52.3	22.0	Tahuanu	Europe	General	6,966	5,816	4,113
Liebre	15	6.30	15	7.48	15	15.58	16	19.59	American	General Petroleum Co.	435.0	56.2	20.3	Los Angeles	Tampico	Ballast	7,567	5,089	
Bogota	15	19.50	16	7.51	17	15.40	16	19.59	British	Pacific Steam Navigation Co.	400.0	52.4	22.6	Valparaiso	Europe	General	5,687	5,733	4,015
Kentuckian	17	7.00	17	8.05	17	15.15	17	15.15	American	American-Hawaiian Line.	414.5	53.7	23.0	Bellingham	New York	General	5,955	2,832	1,803
Frederick	17	12.00	17	13.03	17	21.15	18	11.57	American	Luckenbach Line	317.5	40.2	19.0	Seattle	Mobile	General	1,900	4,838	2,959
Sancti Teda	17	12.30	17	13.18	17	21.03	18	10.18	American	W. R. Grace & Co.	298.6	40.0	16.0	Salaverry	New York	General	1,237	4,955	3,523
Mantaro	18	5.00	18	8.12	18	15.13			Peruvian	Peruvian Line	337.3	46.0	19.0	Callao	Cristobal	General	1,966	4,838	2,959
Cruiser Hall	17	22.00	18	8.40	18	16.50	18	17.55	American	United States Steel Products Co.	383.0	50.0	24.2	Portland	Liverpool	General	5,722	4,955	3,523
Salvador	18	13.00	18	13.45	18	23.00			British	Pacific Steam Navigation Co.	215.0	33.0	17.6	Champerico	Cristobal	Coffee, balsam	1,084	1,213	692

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

* Cruiser.

* Nitrate, copper, and general.

* Canned goods and lumber.

PORT OF CRISTOBAL.

Date	Vessel	Line	From—	Date	Vessel	Line	For—
March 12	Abangara	United Fruit Co.	New Orleans via Habana.	March 12	Irene S. Wilkinson	Howard Lumber Co.	New Orleans.
March 12	Actor	Harrison Line	Liverpool via waypoints.	March 13	Abangara	United Fruit Co.	Bocas del Toro.
March 13	Trophon	Royal Netherlands W. I. Mail	High seas.	March 15	Trophon	Anglo-Saxon Petroleum Co.	Tampico.
March 13	Parismina	United Fruit Co.	Tampico.	March 15	San Blas	United Fruit Co.	Boston via waypoints.
March 15	San Blas	United Fruit Co.	New Orleans via waypoint.	March 15	Stuyvesant	Royal Netherlands W. I. Mail	Porto Colombia.
March 15	Antonio Lopez	Spanish Line	Boston via Habana.	March 16	Achilles	Panama Railroad Steamship Line.	Norfolk
March 16	Abangara	Bocas del Toro.	Bocas del Toro.	March 16	Actor	Harrison Line	Puerto Cortez.
March 16	Advance	Puerto Colombia.	New York via waypoints.	March 16	Parismina	United Fruit Co.	New Orleans via waypoints.
March 17	Pastores	Puerto Colombia.	New York via waypoints.	March 16	Abangara	Spanish Line	Barcelona via waypoints.
March 17	Camden	United Fruit Co.	Port Limon.	March 17	Antonio Lopez	Panama Railroad Steamship Line.	New Orleans.
March 18	Colon	Elder & Wyffes, Ltd.	New York via Haiti.	March 17	Gen. G. W. Goethals	United Fruit Co.	New York via Haiti.
March 18	Barranca	Bisso Towboat Co.	New Orleans.	March 18	Pastores	United Fruit Co.	New York via waypoints.
March 18	Puerto Rico	French Line	San Nazaire via waypoints	March 18	Camito	Elders & Wyffes, Ltd.	Kingston, Jamaica.

PORT OF BALBOA.

Date	Vessel	Line	From—	Date	Vessel	Line	For—
March 13	Rosana	Alberto Falt.	Bahia de Caraquez.	March 17	Meriden	General Steamship Corporation.	San Francisco.
March 14	Invader	J. Percival Jefferson.	Los Angeles.	March 18	Rosana	Alberto Falt.	Puntarenas.
March 15	Meriden	General Steamship Corporation.	Arica.				

* Motor.

* Other than ships passing through the Canal.

* Gas screw auxiliary.

Reported Record Trip from New York to Sydney.

The following is from the *New York Herald* of March 6:

What is probably a record for a freighter's trip from New York to Australia via the Panama Canal is reported by Funch, Edye & Co., American agents for the Commonwealth and Dominion Line. The *Port Nicholson* left New York January 21 and arrived at Brisbane February 24 and Sydney March 1 or 36 days in all after a stop of 2 days for bunkers at Newport News.

The *Port Nicholson* arrived at Cristobal on this voyage at 11.11 p. m., January 29, and started through the Canal at 7.22 the following morning, taking place No. S 2 in the schedule for transit. She completed transit at 3.42 p. m. and cleared for sea at 4.19 p. m., after receiving commissary supplies, which had been ordered on arrival and were delivered at Balboa from the supply boat while the vessel was underway.

Commenting on this voyage, the agent for the Commonwealth and Dominion Line on the Isthmus states:

According to books of reference we have, the following are the distances in nautical miles:

New York to Newport News.....	289
Newport News to Colon.....	1,776
Colon to Balboa.....	38
Balboa to Brisbane.....	7,603
Brisbane to Sydney.....	474

Total nautical miles..... 10,180

As the vessel arrived in Brisbane on February 24 and in Sydney on March 1, it is to be assumed that she remained in the former port until February 27. Brisbane to Sydney would be a 36-hour run. Allowance must be made for the setback in date of a day when she crossed the Date Line about meridian 180.

The *Port Nicholson* is a twin-screw steamer of 8,402 tons gross register, equipped with steam turbines, which give her a speed of between 13 and 14 knots. She is one of the latest of the line, having been built in 1919.

Unusual and Exacting Repair Job.

The following is from the report of the Superintendent of the Mechanical Division for the month of February:

A most unusual and exacting job in the nature of repairs was performed by the Balboa shops on the crank shaft from the port auxiliary compressor engine of the motor ship *Pedro Christopherson*. Due to an accident on board ship the 4-throw crank shaft was twisted, leaving the shaft distorted to a total of about 63 degrees from a vertical line from No. 1 throw to the end of the shaft. The distortion existed in all of the throws from 16 to 18 degrees in each one. The shaft was about 13 feet 6 inches over all, the radius of the throws 8 inches and the diameter of the crank and main bearings about 7 $\frac{1}{4}$ inches. It was dismantled and sent to the shops, heated and straightened and the throws and journals turned; the maximum amount of material lost in the re-turning did not exceed 3/64 of an inch. When the rigidity of the shaft, the general twist over its entire length, and the small amount of material lost in remachining is considered, it is believed that an unusually difficult job was very successfully handled.

Agency for United States Mail Steamship Company's European Passenger Service.

The Panama Railroad Company has accepted the agency of the United States Mail Steamship Co., Inc., for the sale of passenger tickets over the line of that company between New York and Europe. Through tickets from the Isthmus to European ports may be purchased from the Steamship Ticket Agent of the Panama Railroad Company at Cristobal.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending March 18, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
St. Joseph.....	French Line.....		March 12.....		149
Jamaica.....	Pacific Steam Navigation Co.....		March 12.....		8
Abangarez.....	United Fruit Co.....	March 12.....	March 13.....	(¹)	357½
Actor.....	Harrison Line.....	March 12.....	March 15.....	436	(²)
Trophon.....	Anglo-Saxon Petroleum Co.....	March 12.....	March 14.....	4,400	(²)
Huallaga.....	Peruvian Line.....		March 14.....		399
Acajutla.....	Pacific Steam Navigation Co.....		March 14.....		527
Manavi.....	Pacific Steam Navigation Co.....		March 14.....		128
Parismina.....	United Fruit Co.....	March 13.....	March 16.....	883	(²)
Hudson.....	French Line.....	March 14.....	March 14.....	3	(²)
Balboa.....	Colombian Maritime Co.....	March 14.....	March 14.....	64	
Point Judith.....	Pacific Mail Steamship Co.....	March 14.....	March 17.....	2,984	88
Antonio Lopez.....	Spanish Line.....	March 15.....	March 16.....	213	426
San Blas.....	United Fruit Co.....	March 15.....	March 15.....	12	(²)
Bogota.....	Pacific Steam Navigation Co.....	March 16.....	March 16.....	(¹)	22
Advance.....	Panama Railroad Steamship Line.....	March 16.....	March 16.....	250	
Abangarez.....	United Fruit Co.....	March 16.....	March 16.....	1½	100
Pastores.....	United Fruit Co.....	March 17.....	March 18.....	183	302
Santa Tecla.....	W. R. Grace & Co.....	March 17.....	March 18.....	170	(²)
Camden.....	United Fruit Co.....	March 17.....	March 17.....	8,897	
Gen. G. W. Goethals.....	Panama Railroad Steamship Line.....		March 18.....		1,665
Camito.....	Eller & Fyffes, Ltd.....	March 18.....	March 18.....	15	8
Salvador.....	Pacific Steam Navigation Co.....	March 18.....	March 18.....	1,084	
Sarpfos.....	Caribbean Steamship Line.....	March 18.....	March 18.....	4	(²)
Mantaro.....	Peruvian Line.....	March 18.....	March 18.....	1,966	
Puerto Rico.....	French Line.....	March 18.....	March 18.....	41	
Kekoskee.....	Columbus Shipping Co.....	March 18.....	March 18.....	6,211	
Gen. H. F. Hodges.....	Panama Railroad Steamship Line.....	March 18.....	March 18.....	994	
Colon.....	Panama Railroad Steamship Line.....	March 18.....	March 18.....	1,935	

* No cargo discharged.

* No cargo laded.

* Pounds.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending March 18, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
San Juan.....	Pacific Mail Steamship Co.....	March 11.....	March 12.....		26
George Washington.....	Peter Olsen.....	March 12.....	March 12.....	180	
Richeoncal.....	United States Shipping Board.....	March 12.....	March 13.....	8,000	
Acajutla.....	Pacific Steam Navigation Co.....	March 14.....	March 14.....		1
Manavi.....	Pacific Steam Navigation Co.....	March 14.....	March 14.....		11
Meriden.....	General Steamship Corporation.....	March 15.....	March 16.....	950	
Santa Tecla.....	W. R. Grace & Co.....	March 17.....	March 17.....	4	

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the two weeks ended March 21:

Steamship *Argyll*, furnish air for operation of ship's auxiliaries; clean salt out of boilers; scale furnaces, combustion chamber, and tube sheets; install approximately 575 new tubes; barge *No. 13*, dock and undock; clean bottom; remove and install 8 new shell plates; paint bottom 1 coat of anticorrosive and 1 coat of antifouling; launch *Palo Seco*, remetal crank bearings; remove tail shaft; repair hull, woodwork, and general minor repairs; motor ship *Rosana*, manufacture 2 collars and 3 nozzles; steamship *Easterner*, manufacture and install a plate patch on lower end of air pump walking beam bracket; drill low-pressure cylinder column and install through bolts for supports; fit taper pin in air pump rod.

PREVIOUSLY REPORTED.

Steamship *La Habra*, dock and undock; stage and clean; paint bottom and general operating repairs; tug *Gorgona*, dock and undock; stage and clean; chip and paint bottom; draw tail shaft and miscellaneous repairs to ship's operating gear; barge *No. 135*, straighten coaming; tighten bad order rivets; drill barge *L-55*, remove from water and place on dock; remove copper sheathing in spots for examination of hull.

The following vessels were at the Cristobal shops for repairs during the week ended March 20:

Steamships *Stuyvesant*, manufacture M. P. valve stem, valve, and rings; repair air pump valves and make 8 sets of Kinghorn metal valves; repair steering engine exhaust line; repair brine line for ice machine, etc.; *Port Chalmers*, manufacture new H. P. piston follower, bull ring, snap rings, and bolts, etc.; *Balboa*, electric weld boiler as directed; furnish steering chains and overhaul steering gear and blocks; repair hand fire pump; renew floor plates in stokehold; repair steam pipe to forward winches; manufacture box wrench; renew brake band on windlass, etc.; *Liebre*, renew air pump bracket; check up beam; true up pump rod, etc.; *Advance*, install valve in auxiliary steam line; manufacture 2 rods for sanitary pump; repair bilge suction line in engine room; anneal and repair steering chains; repair No. 1 winch cylinder; install fresh water pump in engine room, etc.; *Gen. H. F. Hodges*, install reinforcing plate on shell, amidships; anneal spare set of steering chains; refasten mooring checks on after counter; repair dining room chairs, etc.; *Colon*, install patches on lifeboat; repair wire to engine and rudder indicators; electric weld horse collar on starboard forward boiler, etc.; *Salvador*, remetal crank brass; manufacture 2 compressor rods; face up grooves in H. P. piston hood and supply and fit new rings, etc.; *Jamaica*, manufacture new boom; install 2 pins in steering engine coupling, etc.; *Manlaro*, renew tee piece in suction line to sanitary pump; manufacture 6 studs and braze copper pipe, etc.; *Point Judith*, tug *Favorite*, and launches *Gold Star* and *Wilhelm*, minor repairs.

Scheduled Sailings of Panama Railroad Liners.

The following are proposed sailings of vessels of the Panama Railroad Steamship Line between Cristobal and New York, all voyages being by way of Port-au-Prince, Haiti:

CRISTOBAL TO NEW YORK.

Steamer.	Leave.	Arrive.
Colon.....	March 24.....	April 1.
Panama.....	April 4.....	April 12.
Gen. Geo. W. Goethals.	April 14.....	April 22.
Colon.....	April 24.....	May 2.
Panama.....	May 5.....	May 13.
Gen. Geo. W. Goethals.	May 13.....	May 21.
Colon.....	May 24.....	June 1.

NEW YORK TO CRISTOBAL.

Panama.....	March 23.....	March 28.
Gen. Geo. W. Goethals.	March 30.....	April 7.
Colon.....	April 10.....	April 18.
Panama.....	April 20.....	April 28.
Gen. Geo. W. Goethals.	April 29.....	May 7.
Colon.....	May 10.....	May 18.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. For ships when delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa.

For coal in large quantities as specified below, taken from alongside Cristobal Coaling Plant by vessels transiting the Canal:

- To vessels taking 1,200 tons or over;
- To vessels taking between 825 and 1,200 tons and bunkering full;
- To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at \$10 per ton of 2,240 pounds.

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at \$10 per ton.

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 4 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

Sale of Tugboat "Empire."

Sealed bids in triplicate will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., and also at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, not later than 10.30 a. m. on the 17th day of April, 1922, at which time they will be opened in public simultaneously in both offices, for the purchase of the seagoing tugboat *Empire*, 120 feet over-all length, located at Balboa, Canal Zone. Detailed information with photographs, if desired, and form of proposal (Circular No. 1471) may be had upon application to the offices of the General Purchasing Officer or the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids in its discretion.

Scrap Burlap Bagging.

The Supply Department has on hand, available for sale, at the general storehouse, Balboa, a large quantity of scrap burlap bagging included in which are a quantity of clean but torn burlap bags.

This material is suitable for packing furniture, etc., and is offered at a price of 3 cents per pound put up in bales averaging 250 pounds each, or in smaller quantities if desired.

Arrangements for purchase should be made direct with the General Storekeeper, Balboa, C. Z.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

THE PANAMA CANAL RECORD

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., March 29, 1922.

No. 33.

CANAL WORK IN FEBRUARY.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of February, 1922:

BALBOA HEIGHTS, C. Z., March 18, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of February, 1922.

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal during the month of February, 1922, as compared with the preceding month and with the corresponding month of last year, was as follows:

	February, 1922.	January, 1922.	February, 1921.
Commercial vessels.....	212	210	241
Noncommercial vessels.....	12	22	94
Launches, etc. (under 10 tons measurement).....	5	6	3
Total vessels and craft through Canal.....	229	238	338

In addition to the foregoing, Panama Canal equipment consisting of floating cranes, barges, craneboats, graders, etc., was passed through the locks as follows:

Gatun.....	18
Pedro Miguel.....	31
Miraflores.....	27

COMMERCIAL TRAFFIC.¹

Tolls.

Under the present dual method of assessing tolls, the revenue from this source was \$866,266.18. Had the net tonnage as determined by the Panama Canal rules of measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$176,001. These additional tolls would have been contributed by nationality of vessels as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$34,268.19	\$19,990.20	\$54,258.39
Chilean.....	3,200.00	2,548.10	5,748.10
Danish.....	334.10	244.65	578.75
Dutch.....	1,297.40	3,929.70	5,227.10
French.....	475.20	1,429.78	1,904.98
German.....	797.30	2,412.75	3,210.05
Italian.....		1,481.30	1,481.30
Japanese.....	4,379.65		4,379.65
Norwegian.....	2,595.15	1,529.25	4,124.40
Peruvian.....	3,315.75	3,315.75	6,631.50
Swedish.....	1,928.75	2,049.95	3,978.70
United States.....	39,526.38	44,951.70	84,478.08
Totals.....	92,117.87	83,883.13	176,001.00

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial."

The additional tolls which would have been paid by United States vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$24,777.58	\$19,449.70	\$44,227.28
United States and Canal Zone ports.....	319.70		319.70
United States and United States possessions.....		2,199.25	2,199.25
United States and foreign ports.....	13,151.15	21,183.92	34,335.07
Between foreign ports.....	1,277.95	2,118.83	3,396.78
Totals.....	39,526.38	44,951.70	84,478.08

Of the \$176,001 additional revenue that would have been collected by using the Panama Canal rules exclusively, \$5,478.80 represents the additional tolls that would have been collected on account of deck cargo.

COMPARATIVE TRAFFIC STATISTICS.

The following tabulations permit a ready comparison of commercial traffic through the Panama Canal in February, 1922, with that of the preceding months, along the lines indicated at the head of the various tables:

TONNAGE, TOLLS, AND CARGO CARRIED.

	February, 1922.	January, 1922.	February, 1921.	Average month for past year.
United States equivalent net tonnage.....	710,548	689,035	763,925	764,519
Panama Canal net tonnage.....	886,535	846,516	916,838	940,632
Registered gross tonnage.....	1,116,014	1,069,840	1,179,979	1,188,406
Registered net tonnage.....	700,126	691,648	752,022	758,378
Tolls.....	\$866,266.18	\$847,767.55	\$917,412.49	\$926,795.18
Cargo.....	838,074	807,298	952,904	882,313

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.10	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,724.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134
1922.								
January.....	28	138,928	141,404.35	119,413	20	108,921	111,440.00	86,862
February.....	25	117,512	116,235.60	84,548	19	89,862	84,133.82	84,330

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.29	98,075
February.....	8	41,024	42,951.75	35,018	20	96,441	94,082.01	108,285
March.....	18	94,823	96,782.80	98,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,049	53,162.18	62,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	80,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,799.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	40,542	18	79,390	77,353.39	91,897
September.....	10	53,810	51,785.48	38,308	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,593	14	61,980	62,318.75	79,120
November.....	12	74,635	71,625.74	44,976	6	29,949	29,127.50	28,865
December.....	9	47,604	46,318.75	44,101	6	32,957	32,803.75	28,784
1922.								
January.....	6	34,546	34,756.25	23,575	7	31,550	30,646.95	28,831
February.....	8	39,168	36,706.25	49,424	6	32,909	31,538.75	21,119

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED.

	February, 1922.	January, 1922.	February, 1921.
United States equivalent net tonnage.....	3,351	3,281	3,170
Panama Canal net tonnage.....	4,182	4,031	3,804
Registered gross tonnage.....	5,264	5,095	4,896
Registered net tonnage.....	3,302	3,294	3,120
Tolls.....	\$4,086.16	\$4,036.99	\$3,806.69
Tons of cargo (all vessels).....	3,953	3,844	3,954
Tons of cargo (laden vessels only).....	4,411	4,160	4,495

COMMODITY STATISTICS.

A classification of cargo passing through the Panama Canal during the month of February, 1922, has been compiled from declarations of cargo submitted by the ships' masters, and while incomplete, is indicative of the kind and quantity of the various commodities carried by ships transiting the Canal. From the cargo declarations and manifests submitted, it was possible to classify by commodities 81 per cent of all cargo passing from the Atlantic to the Pacific, and 93 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith:

Commodity.	February, 1922.	January, 1922.	December, 1921.	November, 1921.	October, 1921.	September, 1921.
Atlantic to Pacific.						
Oil:						
Crude.....	41,755	65,862	48,272	30,144	68,891	17,981
Refined.....	28,893	28,407	46,970	47,944	25,840	19,781
Other.....	6,699	6,230	1,913	3,113	1,121	2,088
Manufactured goods:						
Iron and steel.....	109,575	78,020	81,168	65,071	48,074	50,488
Machinery, railroad material.....	18,142	38,689	24,120	23,927	14,659	19,331
Coal and coke.....	32,545	37,587	46,462	52,850	21,512	16,040
Cotton, raw.....	18,218	8,793	37,614	20,807	14,725	19,207
Metals.....	12,246	10,992	22,007	10,052	8,880	8,467
Ammonia.....	8,783	10,767	11,592	7,447	12,072	4,749
Cement.....	4,662	2,675	10,809	5,233	2,681	1,834
Paper.....	2,198	2,569	5,077	2,900	2,813	1,210
Sulphur.....	15,400	18,025	4,000	2,500		11,551
Tobacco.....	3,923	1,831	3,086	2,075	2,879	2,452
Other and general.....	139,786	183,144	174,015	112,618	150,290	125,541
Totals.....	442,825	493,591	517,110	386,681	374,437	300,720
Pacific to Atlantic.						
Nitrate.....	27,022	46,716	59,957	39,523	54,256	22,758
Manufactured goods: Iron, steel, etc.....	214	2,369	2,550	265	1,053	556
Wheat.....	57,514	29,333	35,127	110,831	128,375	75,486
Lumber.....	64,002	57,347	42,610	50,564	56,606	26,750
Barley.....	6,596	8,462	21,781	37,989	67,092	107,831
Oils:						
Crude.....	10,505		4,723	26,617	670	4,820
Refined.....	10	42	16,165	10,169	9,713	18,278
Other.....	15,516	1,958	14,469	761	1,581	1,545
Canned goods:						
Fish.....	10,798	9,246	5,202	13,767	32,761	17,232
Fruit.....	8,428	11,729	15,982	19,808	25,547	35,427
Vegetables, milk.....	1,211	890	1,660	1,470	2,523	4,302
Ores.....	32,265	10,647	9,805	13,218	3,824	6,433
Metals.....	14,659	14,234	10,959	14,515	11,078	10,516
Fruit, fresh and dried.....	11,549	8,697	3,876	13,060	4,162	6,664
Sugar.....	3,624	12,679	29,879	11,210	20,261	6,657
Beans, peas, lentils.....	3,766	5,088	5,351	9,270	20,547	6,774
Flour.....	3,796	1,017	8,881	8,799	19,000	15,101
Phosphates.....	6,500	7,930	8,900	7,300	14,057	
Cold storage—Meats.....	17,207	5,786	13,809	4,920	18,739	10,600
Cotton.....	3,428	4,238	6,660	4,886	12,592	5,392
Rice.....	400	1,621	6,401	4,678	4,054	7,205
Wool.....	18,363	16,024	5,555	4,349	9,081	5,522
Coffee.....	9,484	3,775	4,529	3,785	4,594	6,013
Ivory nuts.....	1,909	2,717	2,482	3,012	2,811	3,164
Cacao.....	1,866	3,917	4,745	2,862	3,844	4,327
Tea.....	38	410	1,394	1,983	3,950	546
Other and general.....	64,579	46,835	92,491	49,148	78,567	44,275
Totals.....	395,249	313,707	435,943	468,759	611,338	454,174

TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate of such tolls per cargo ton varies in different ships as the ratio of cargo tonnage to the net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of February, 1922, by nationality of vessels:

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.17	\$1.05	\$1.12
Chilean.....	1.79	8.24	2.24
Danish.....	.75	.81	.77
Dutch.....	1.99	.58	.82
French.....	4.13	.88	1.08
German.....	2.56	.88	1.27
Italian.....		6.56	6.56
Japanese.....	.87		.87
Norwegian.....	.67	.90	.73
Peruvian.....	4.19	1.06	1.69
Swedish.....	1.44	.51	.77
United States.....	1.04	.94	.99
Average rate all ships, February, 1922.....	1.09	.97	1.03
Average rate all ships, January, 1922.....	1.04	1.06	1.05
Average rate all ships, February, 1921.....	.94	.97	.96

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscellaneous.	Total.
January, 1921.....	284,111	129,939	60,564	21,373	21,732	517,719
February.....	268,727	75,532	55,859	18,844	16,271	435,233
March.....	291,937	188,548	85,275	20,731	27,100	613,591
April.....	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,669
January, 1922.....	279,870	153,315	30,271	18,398	31,910	513,764
February.....	273,996	146,572	30,477	19,061	17,899	488,005
Average month.....	273,884	148,012	37,886	22,079	22,728	504,589

DESTINATION OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
January, 1921.....	163,295	170,861	56,082	94,583	32,898	517,719
February.....	119,271	168,904	66,958	62,507	17,593	435,233
March.....	139,889	146,075	118,953	153,910	55,064	613,591
April.....	141,584	135,622	131,637	64,155	19,508	492,506
May.....	125,091	103,143	82,499	82,582	21,114	414,429
June.....	143,217	106,309	83,063	46,298	30,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,486	70,551	50,719	487,219
September.....	268,758	90,105	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,615	115,980	136,940	84,391	49,743	575,669
January, 1922.....	170,927	112,160	100,878	83,526	46,273	513,764
February.....	151,388	107,476	107,197	94,271	27,673	488,005
Average month.....	172,009	123,995	93,568	77,542	37,475	504,589

ORIGIN OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
January, 1921	151,034	230,437	26,843	115,206	53,084	576,604
February	173,815	226,242	22,473	34,616	24,459	481,605
March	163,294	203,002	28,525	62,652	41,754	499,227
April	139,495	168,585	29,756	85,560	38,601	462,997
May	174,128	137,258	12,407	81,086	45,309	450,188
June	116,521	112,474	18,740	75,400	23,040	346,175
July	174,412	99,745	41,084	70,124	22,197	407,562
August	229,629	110,248	20,628	68,661	48,894	478,067
September	218,453	84,212	14,762	30,814	46,262	394,503
October	252,645	124,560	37,720	41,436	42,018	498,379
November	189,942	126,381	23,556	6,581	56,934	403,394
December	195,969	135,952	28,194	39,616	41,844	441,575
January, 1922	152,992	100,224	16,860	27,172	35,504	332,752
February	142,693	110,778	21,594	42,950	80,515	398,530
Average month	176,838	140,908	25,764	56,853	58,489	446,144

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
January, 1921	293,836	188,133	49,947	23,295	21,393	576,604
February	175,324	163,690	74,363	18,056	50,174	481,605
March	190,683	189,793	83,700	21,228	13,823	499,227
April	189,209	197,311	53,334	22,043	1,100	462,997
May	201,548	140,940	73,705	21,549	12,446	450,188
June	155,147	136,292	18,324	26,112	10,300	346,175
July	205,690	134,047	23,123	28,770	15,932	407,562
August	231,830	194,279	27,256	22,022	2,670	478,067
September	204,820	140,555	26,478	17,114	5,536	394,503
October	259,613	170,189	18,222	30,955	19,400	498,379
November	196,974	164,345	20,446	16,760	4,869	403,394
December	191,277	192,575	25,550	21,739	10,434	441,575
January, 1922	115,392	168,337	26,831	16,489	5,703	332,752
February	163,919	172,900	31,767	18,242	11,702	398,530
Average month	200,712	166,968	42,163	22,874	13,427	446,144

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of February, 1922, of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year:

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe		18.5		1.0
East coast of United States	3.6		0.1	
East coast of Mexico		24.7		20.0
Cristobal, C. Z.		20.5		14.0
West coast of United States		20.0		20.0
West coast of South America		13.2		21.3
Australasia	21.7			24.8
Far East	14.8			16.3

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for the month of February, 1922, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of March 8, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes for the month of February, 1922, for the preceding month, and for the corresponding month of last year:

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	February 1922.	January. 1922.	February. 1921.	February. 1922.	January. 1922.	February. 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	25	28	15	19	20	17
United States and Far East.....	17	15	15	3	2	4
Europe and United States.....	4	7	2	0	7	13
United States and South America.....	11	11	26	12	9	17
Europe and South America.....	10	12	9	11	11	20
Cristobal and South America.....	12	10	9	10	10	11
Europe and Australasia.....	9	10	4	5	4	5
United States and Australasia.....	4	4	6	1	2	2
Europe and Canada.....	2	4		6	4	
Mexico and United States.....			4	1	1	6
Mexico and South America.....	4	4	5	2	3	7
Miscellaneous.....	16	20	19	19	12	25
Totals.....	114	125	114	98	85	127
	Panama Canal net tonnage.			Panama Canal net tonnage.		
	February 1922.	January. 1922.	February. 1921.	February. 1922.	January. 1922.	February. 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	117,512	138,928	80,940	89,862	108,921	66,043
United States and Far East.....	87,553	81,449	66,958	17,190	10,475	20,894
Europe and United States.....	21,827	28,243	11,022	41,867	31,964	62,475
United States and South America.....	31,968	32,227	88,942	40,011	29,283	55,590
Europe and South America.....	39,657	45,525	39,660	46,101	42,789	88,139
Cristobal and South America.....	15,278	13,936	12,704	14,312	12,749	13,477
Europe and Australasia.....	63,962	57,000	24,850	32,664	18,560	24,710
United States and Australasia.....	22,048	22,366	25,631	6,216	8,612	9,906
Europe and Canada.....	11,076	18,615		33,689	22,079	
Mexico and United States.....			19,786	6,050	5,043	28,804
Mexico and South America.....	20,573	20,472	27,598	10,354	15,403	34,770
Miscellaneous.....	56,551	55,003	37,142	60,214	26,874	76,798
Totals.....	488,005	513,764	435,233	398,530	332,752	481,605
	Tons of cargo carried.			Tons of cargo carried.		
	February 1922.	January. 1922.	February. 1921.	February. 1922.	January. 1922.	February. 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	94,548	119,413	67,302	84,330	86,862	68,345
United States and Far East.....	133,506	121,939	93,193	19,959	14,845	24,098
Europe and United States.....	6,700	20,877	2,400	61,122	48,186	93,417
United States and South America.....	23,921	16,702	105,339	48,333	30,848	62,259
Europe and South America.....	24,366	17,912	22,552	57,139	53,813	112,397
Cristobal and South America.....	3,645	2,258	3,249	4,723	6,194	4,308
Europe and Australasia.....	30,294	46,096	17,342	28,081	20,279	23,771
United States and Australasia.....	25,535	22,634	39,406	9,200	8,800	3,122
Europe and Canada.....	9,453	15,872		49,181	26,395	
Mexico and United States.....			36,525			1,200
Mexico and South America.....	27,037	37,152	46,128			230
Miscellaneous.....	63,820	72,736	41,436	33,181	17,485	84,882
Totals.....	442,825	493,591	474,872	395,249	313,707	478,032

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships, and other noncargo-carrying vessels, are shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	6	27,390	\$24,116.17	4	18,173	\$13,252.71
French.....				1	2,096	1,616.25
Japanese.....	1	5,979	6,467.50			
Norwegian.....				1	5,043	3,630.96
United States.....	4	11,141	8,031.99	5	18,425	13,266.00
Totals.....	11	44,510	38,615.66	11	43,737	31,765.92

LATIN-AMERICAN TRAFFIC.

The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality:

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	17	32,674	41,803	54,658	33,704	\$38,366.72	32,270
Chilean.....	3	5,840	8,780	12,488	6,886	7,300.00	4,066
Danish.....	1	2,438	2,485	2,465	1,685	3,047.50	4,246
Dutch.....	2	4,556	5,827	7,311	4,504	5,695.00	2,850
French.....	1	3,600	4,146	5,765	3,681	4,500.00	1,090
German.....	2	9,156	9,933	12,022	7,554	11,134.30	4,315
Japanese.....	1	5,513	6,385	9,049	6,552	6,891.25	8,000
Norwegian.....	5	12,609	15,107	20,190	12,613	15,761.25	23,894
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	901
Swedish.....	1	1,338	1,431	2,242	1,595	1,672.50	1,789
United States.....	11	24,321	28,994	38,420	23,885	28,329.13	24,058
Totals, February, 1922.....	46	105,066	130,801	173,971	107,759	126,473.90	107,459
Totals, January, 1922.....	53	125,593	157,920	206,237	128,918	154,248.53	138,640
Totals, February, 1921.....	67	180,148	217,954	282,755	179,204	221,102.65	252,149

PACIFIC TO ATLANTIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British	20	50,599	58,680	80,766	51,317	\$55,486.61	48,143
Chilean	2	3,086	5,338	6,527	3,905	3,857.50	468
Dutch	1	2,012	3,120	3,209	1,989	2,515.00	4,230
French	2	5,302	6,076	8,283	5,342	5,550.00	5,163
German	4	9,690	11,898	13,697	8,336	11,870.85	13,746
Italian	2	5,822	7,299	10,048	6,050	7,277.50	1,110
Norwegian	3	10,530	11,741	15,521	10,528	10,995.01	10,043
Peruvian	2	3,021	5,910	9,361	5,100	3,776.25	3,552
Swedish	1	1,091	1,213	1,824	1,085	1,363.75	2,250
United States	11	30,017	37,672	49,627	30,140	34,152.98	29,042
Totals, February, 1922	48	121,170	148,947	198,863	123,792	136,845.45	117,747
Totals, January, 1922	43	97,282	122,476	163,863	100,454	111,178.08	96,515
Totals, February, 1921	80	228,106	275,552	360,913	224,345	256,138.79	243,900

CLASSIFICATION OF COMMERCIAL TRAFFIC.

A statement of this month's commercial traffic, classified by nationality of vessels, is shown in the following tabulation:

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific.							
British.....	41	151,346	185,907	225,628	141,528	\$182,973.57	154,647
Chilean.....	3	5,840	8,780	12,488	6,886	7,300.00	4,066
Danish.....	1	2,438	2,485	2,465	1,685	3,047.50	4,246
Dutch.....	2	4,556	5,827	7,311	4,504	5,695.00	2,850
French.....	1	3,600	4,146	5,765	3,681	4,500.00	1,090
German.....	2	9,156	9,933	12,022	7,554	11,134.30	4,315
Japanese.....	9	40,220	44,946	60,074	40,773	49,555.55	57,176
Norwegian.....	5	12,609	15,107	20,190	12,613	15,761.25	23,894
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	901
Swedish.....	2	3,641	5,400	6,044	4,434	4,551.25	3,154
United States.....	46	158,390	199,564	243,975	156,199	194,638.74	186,486
Totals.....	114	394,817	488,005	605,323	384,957	482,933.41	442,825
From Pacific to Atlantic.							
British.....	33	104,068	125,753	163,008	103,743	127,679.36	121,426
Chilean.....	2	3,086	5,338	6,527	3,905	3,857.50	468
Danish.....	1	4,131	4,507	4,088	2,506	5,163.75	6,364
Dutch.....	2	6,486	10,031	10,519	6,484	8,107.50	13,923
French.....	4	12,440	14,010	18,533	11,871	14,387.20	16,340
German.....	4	9,690	11,898	13,697	8,336	11,870.85	13,746

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Pacific to Atlantic—Contd.							
Italian.....	2	5,822	7,299	10,048	6,050	\$7,277.50	1,110
Norwegian.....	4	13,576	15,627	20,415	13,582	14,802.51	16,443
Peruvian.....	2	3,021	5,910	9,361	5,100	3,776.25	3,552
Swedish.....	2	3,377	5,226	5,588	3,937	4,221.25	8,234
United States.....	42	150,034	192,931	237,929	149,655	182,189.10	193,643
Totals.....	98	315,731	398,530	499,713	315,169	383,332.77	395,249
Combined traffic both ways.							
British.....	74	255,414	311,660	388,636	245,271	310,652.93	276,073
Chilean.....	5	8,926	14,118	19,015	10,791	11,157.50	4,584
Danish.....	2	6,569	6,992	6,553	4,191	8,211.25	10,610
Dutch.....	4	11,042	15,858	17,830	10,988	13,802.50	16,773
French.....	5	16,040	18,156	24,298	15,552	18,887.20	17,430
German.....	6	18,846	21,831	25,719	15,890	23,005.15	18,061
Japanese.....	9	40,220	44,946	60,074	40,773	49,555.55	57,176
Italian.....	2	5,822	7,299	10,048	6,050	7,277.50	1,110
Norwegian.....	9	26,185	30,734	40,605	26,195	30,563.76	40,337
Peruvian.....	4	6,042	11,820	18,722	10,200	7,552.50	4,453
Swedish.....	4	7,018	10,626	11,632	8,371	8,772.50	11,388
United States.....	88	308,424	392,495	481,904	305,854	376,827.84	380,128
Totals.....	212	710,548	886,535	1,105,036	700,126	866,266.18	838,074

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	103	443,495	\$444,317.75	86	354,793	\$346,077.85
Ballast.....	11	44,510	38,615.66	11	43,737	31,765.92
Cruiser.....				1	(¹)	5,489.00
Totals.....	114	488,005	482,933.41	98	398,530	383,332.77
Steamships.....	109	479,024	476,417.94	91	384,285	363,091.01
Motor ships.....	2	8,798	6,355.63	3	13,627	14,247.50
Motor schooners.....	2	144	130.59	2	135	157.50
Yachts.....	1	39	29.25	1	483	347.76
Cruiser.....				1	(¹)	5,489.00
Totals.....	114	488,005	482,933.41	98	398,530	383,332.77

¹ Displacement tonnage, 10,978.

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Panama Canal free of tolls during the month of February, 1922. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Panama Canal; these are not included in the commercial traffic:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels:						
Subchaser.....	1	61	\$30.50	1	61	\$30.50
Supply ship.....	1	10,600	5,300.00			
Tugs.....	3	2,750	1,375.00			
Transport.....	1	138	99.36	1	4,840	2,420.00
United States Army mine planter.....	2	5,957	5,292.61	2	5,957	5,292.61
Commercial vessels for repairs.....	5	18	18.90			
Launches.....						
Total noncommercial.....	13	13,411	12,116.37	4	4,901	7,743.11
		6,113			5,957	

¹ Indicates displacement tonnage.

Cargo through the Panama Canal free of tolls:

	Tons.
Atlantic to Pacific.....	3,484
Pacific to Atlantic.....	358
Total.....	3,834

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of February, 1922, are shown in the following tabulations:

	Cristobal.	Balboa.	Totals.
Local cargo arriving..... tons	48,990	6,914	55,904
Local cargo shipped..... tons	2,751	297	3,048
Transit cargo arriving..... tons	842,836	839,806	1,682,642
Transit cargo clearing..... tons	845,254	844,766	1,690,020
Cargo received for transshipment..... tons	19,375	1	19,376
Cargo transhipped..... tons	20,281	78	20,359
Cargo handled by Receiving and Forwarding Agency, Panama Railroad:			
Received..... tons	29,439	818	30,257
Dispatched..... tons	25,680	477	26,157
Rehandled..... tons	481	14	495
Stevedored..... tons	21,283	827	22,110
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	59	5	64
Panama Railroad vessels.....	5		5
United States Army vessels.....	4		4
Total vessels supplied with bunker coal.....	68	5	73
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons	19,569	1,412	20,981
Panama Railroad vessels..... tons	1,299		1,299
United States Army vessels..... tons	54		54
Total coal supplied to vessels..... tons	20,922	1,412	22,334
Coal issues, miscellaneous:			
Panama Canal departments..... tons	674	104	778
Panama Railroad, excepting vessels..... tons	24		24
United States Army, excepting vessels..... tons	217	29	246
Individuals and companies..... tons	346		346
Total miscellaneous..... tons	1,261	133	1,394
Total issues from Panama Canal deposits:			
February, 1922..... tons	22,183	1,545	23,728
January, 1922..... tons	19,496	993	20,489
February, 1921..... tons	31,391	2,539	33,930
Coal on hand, March 1, 1922..... tons	132,610	27,361	159,971
Coal on hand, February 1, 1922..... tons	154,793	28,906	183,699
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels..... tons	441	205	646
Coal on hand, March 1, 1922..... tons	61,508	16,809	78,317
Coal on hand, February 1, 1922..... tons	61,949	17,014	78,963
Fuel oil issues:			
Panama Canal departments..... bbls	4,778	15,373	20,151
Panama Railroad..... bbls	447		447
Army and Navy..... bbls	606		606
Individuals and companies..... bbls		35	35
Total issues and sales..... bbls	5,831	15,408	21,239
Fuel oil on hand, March 1, 1922..... bbls	44,396	89,771	134,167
Fuel oil on hand, February 1, 1922..... bbls	50,227	69,211	119,438
Received during February, 1922..... bbls		35,968	35,968
Diesel oil issued during February, 1922..... bbls	13		13
Diesel oil on hand March 1, 1922..... bbls	50,784	915	51,699
Diesel oil on hand, February 1, 1922..... bbls	50,797	915	51,712
Oil pumped for individuals and companies..... bbls	437,079	73,042	510,121
Miscellaneous transfers..... bbls	1,916		1,916
Total oil handled..... bbls	444,846	124,418	569,258
Admeasurement certificates:			
United States equivalent issued or made.....	19	3	22
Measured for Panama Canal net tonnage.....	3	1	4
United States equivalent or Panama Canal tonnage corrected.....	36	28	64

	Cristobal.	Balboa.	Totals.
Services of harbor equipment:			
Tugs, total operating hours.....	380	125	505
Launches, total operating hours.....	1,022	870	1,892
Vessels repaired at Panama Canal shops:			
Commercial.....	36	12	48
United States Government.....	4	3	7
Canal equipment.....	5	20	25
Vessels dry-docked:			
Commercial.....	4	4	8
United States Government.....	1	1	2
Canal equipment.....	3	4	7
Clearances issued.....	136	122	258
Bills of health issued.....	131	122	253

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal:

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
Ships entering.						
All vessels, including those transiting the Canal.....	249	1,370,363	869,296	223	1,179,592	751,454
Vessels entering port but not transiting the Canal.....	48	256,593	154,815	6	25,112	15,552
Vessels transiting the Canal and handling passengers or cargo.....	48	204,570	123,777	40	148,846	89,986
Ships clearing.						
All vessels, including those transiting the Canal.....	252	1,364,545	864,818	224	1,165,350	744,139
Vessels entering port but not transiting the Canal.....	49	252,883	150,641	7	28,820	17,853
Vessels transiting Canal and handling passengers or cargo.....	49	203,384	122,885	41	142,163	86,549

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of February, 1922:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to—						
U. S. Government vessels..	\$72.36	\$51.03	\$287.52		\$28.84	\$439.75
Panama Railroad vessels..	54.00	694.89	3,879.54		598.45	5,226.88
Other commercial vessels..	1,316.56	1,971.57	14,250.12		692.61	18,230.86
Totals, February, 1922.....	1,442.92	2,717.49	18,417.18		1,319.90	23,897.49
Totals, January, 1922.....	1,579.51	15,558.24	3,105.54		968.55	21,211.84
Totals, February, 1921.....	2,794.41	8,461.11	44,316.50	\$5,133.60	4,659.88	65,365.50
Sales at Balboa to—						
U. S. Government vessels..	49.52	597.14	870.59		1.38	1,518.63
Other commercial vessels..	311.34	2,551.13	11,363.24		1,040.45	15,266.16
Totals, February, 1922.....	360.86	3,148.27	12,233.83		1,041.83	16,784.79
Totals, January, 1922.....	474.40	4,082.16	12,320.07	69.30	1,324.62	18,270.55
Totals, February, 1921.....	2,981.76	14,994.75	94,814.40	2,562.82	21,053.93	136,407.66

MOVEMENTS OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of February, 1922:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.....	814	799	1,613			
From Pacific ports.....	194	54	248	156	26	182
Total disembarking.....	1,008	853	1,861	156	26	182
Embarking:						
For Atlantic ports.....	829	711	1,540	4		4
For Pacific ports.....	210	36	246	109	85	194
Total embarking.....	1,039	747	1,786	113	85	198
Remaining on board vessels:						
From Atlantic to Pacific ports.....	659	2,236	2,895	625	2,332	2,958
From Pacific to Atlantic ports.....	349	308	657	544	397	941
From Atlantic to Atlantic ports.....	888	97	985			
From Pacific to Pacific ports.....				13	376	389
Total remaining on board.....	1,896	2,641	4,537	1,183	3,105	4,288
Total passengers departing.....	2,935	3,388	6,323	1,255	3,163	4,418
Total passengers arriving.....	2,904	3,494	6,398	1,339	3,131	4,470

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of February, 1922, as compared with that of the preceding month and of the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	94	107	201	3	2	5	206
Pedro Miguel.....	97	111	208	6	10	16	224
Miraflores.....	88	101	189	5	5	9	198
Total lockages, February, 1922.....	279	319	598	13	17	30	628
Total lockages, January, 1922.....	246	351	597	44	42	86	683
Total lockages, February, 1921.....	362	338	700			71	771

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	104	121	225	13	17	30	255
Pedro Miguel.....	100	116	216	20	20	40	256
Miraflores.....	100	116	216	19	17	36	252
Total vessels, February, 1922.....	304	353	657	52	54	106	763
Total vessels, January, 1922.....	263	384	647	92	105	197	844
Total vessels, February, 1921.....	385	362	747			451	1,198

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	12	9	9
Canal equipment.....	18	31	27
Total noncommercial vessels.....	30	40	36

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	834,610,000	805,470,000	633,920,000
Leakage.....	20,000,000	16,530,000	67,000,000
Maintenance.....			22,040,000
Total consumption, February, 1922.....	854,610,000	822,000,000	722,960,000
Total consumption, January, 1922.....	861,680,000	877,770,000	760,150,000
Total consumption, February, 1921.....	1,030,310,000	994,570,000	965,240,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorological and hydrographic conditions over the Canal Zone and vicinity during the month of February, 1922, are shown in comparative form:

Rainfall.	February, 1922.	February, 1921.	February—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Total for month:					
Pacific Section.....	1.33	1.63	2.51	0.02	0.77
Central Section.....	.91	2.09	4.28	.19	1.34
Atlantic Section.....	1.66	3.04	13.29	.73	2.60
Maximum record on any one day.....	1.66	2.95	10.86		
Gatun Lake watershed.....	1.08	3.04	6.09	.27	1.86
Chagres River watershed above Alhajuela.....	1.48	2.97	5.92	.24	1.69
Maximum record for month at any one point.....	3.36	5.39	24.94		
Minimum record for month at any one point.....		.21			
<i>Hydrography.</i>					
	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	1,399	911	3,315	516	1,260
Maximum momentary discharge for the month.....	2,780	1,820	170,000		
Gatun Lake watershed total yield.....	2,454	1,767	5,077	705	1,979
Gatun Lake watershed net yield.....	1,482	951	4,207	-287	1,195
Draft on Gatun Lake for lockages and power.....	2,058	2,503	2,503	35	1,600

¹ This represents the maximum 24-hour rainfall recorded on the Isthmus since American occupation. Recorded at Porto Bello on December 28-29, 1909.

² This figure represents the maximum momentary discharge on record, occurred on December 26, 1909.

NOTE.—Bocas del Toro not included in data for February, 1922.

SEISMOLOGY.

Only one seismic tremor was recorded during the month. This occurred on the evening of the 15th. The epicenter of the disturbance was about 400 miles distant and the indicated probable direction was northwest. This was later confirmed by cable which reported a disturbance in Nicaragua occurring at approximately the time the tremors were recorded at Balboa Heights.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., are shown in the following tabulation:

	February, 1922.	January, 1922.	February, 1921.
Gross output, KWH:			
Gatun hydroelectric station.....	4,241,600	4,811,800	5,941,900
Miraflores steam plant.....	10,600	280	30,610
Combined gross output.....	4,252,200	4,812,080	5,972,510
Water consumption..... cubic feet.....	3,339,809,600	3,657,240,000	4,006,074,000
Oil consumption..... barrels.....	1,810	1,881	2,101
Power distributed to consumers..... KWH.....	3,631,222	4,122,618	5,034,752
Loss of power in plant auxiliaries, transmission and transformation..... KWH.....	620,978	689,462	937,758
Per cent of loss of power to gross output.....	14.60	14.32	15.70

Miscellaneous electrical repairs and installations of electrical equipment were made on 21 vessels during the month. There were 240 work orders issued for work

to be performed by the Electrical Division during the month, as compared with 375 for the month of January, 1922.

SHOP, FOUNDRY, AND DRY DOCK WORK.

The output of the Mechanical Division in patterns and castings for February, 1922, as compared with the preceding month, was as follows:

	February, 1922.			January, 1922.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	7	140	4,482	5	57	9,943
Steel.....	2	140	20,045	.....	100	13,715
Brass.....	3	254	3,092	.....	120	2,862

During the month, miscellaneous repairs were made on 45 vessels at Cristobal and 35 at the Balboa shops. Of the above vessels, 8 were placed in dry dock at Cristobal and 9 at Balboa.

A most unusual and exacting job in the nature of repairs was performed by the Balboa shops on the crank shaft from the port auxiliary compressor engine of the motor ship *Pedro Christopherson*. As the result of an accident on board ship, the 4-throw crank shaft was twisted, leaving the shaft distorted to a total of approximately 63 degrees from a vertical line from No. 1 throw to the end of the shaft. The distortion existed in all of the throws from 16 to 18 degrees in each one. The shaft was about 13 feet 6 inches over all, the radius of the throws 8 inches, and the diameter of the crank and main bearings about 7½ inches. The crank shaft was dismantled and sent to the shops, heated and straightened, and the throws and journals turned; the maximum amount of material lost in the re-turning did not exceed 3/64ths of an inch. When the rigidity of the shaft, the general twist over its entire length, and the small amount of material lost in remachining are taken into consideration, it is believed that an unusually difficult job was very successfully handled.

DREDGING DIVISION.

Cucaracha, Culebra, and Barge Repair slides have all been quiescent during the entire month. The total excavation for the month of February, 1922, including earth and rock, was 216,550 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment
	Earth.	Rock.			
43,100	9,500	33,600	Maintenance.....	<i>Gaillard Cut, West Culebra.</i> 1789-50 to 1776-50..... 1763-00 to 1757-00 W.....	<i>Gamboa.</i> <i>Gamboa.</i>
15,300	4,100	11,200	Maintenance.....	<i>Gaillard Cut, East Culebra.</i> 1776-00 to 1788-50 E.....	<i>Gamboa.</i>
20,850	14,550	6,300	Maintenance.....	<i>Gaillard Cut, Barge Repair.</i> 1757-00 to 1746 E. and W.....	<i>Gamboa.</i>
27,400	13,000	14,400	Maintenance.....	<i>Pacific Entrance.</i> 2159-00 to 2178-80 E. and W.....	<i>Cascadas.</i>
8,400	.....	8,400	Construction.....	2159-00 to 2178-80 E. and W.....	<i>Cascadas.</i>
85,600	85,600	.....	Maintenance.....	2316-00 to 2355-25 W.....	<i>No. 84.</i>
15,900	15,900	.....	Maintenance.....	2075-00 to 2080-00 W.....	<i>No. 84.</i>
216,550	142,650	73,900			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	79,250
Dumped on flats west of Canal.....	85,600
Dumped on flats east of Canal.....	15,900
Dumped at sea.....	35,800
Total.....	216,550

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	February, 1922.	January, 1922.	February, 1921.
	Gallons.	Gallons.	Gallons.
Pumping stations.....	609,793,750	663,058,500	794,342,250
Filtration plants.....	358,774,000	392,676,000	484,624,000
Water consumed by Panama City.....	75,265,000	85,076,000	84,209,000
Water consumed by Colon.....	53,526,000	52,321,000	57,771,750
Sales of water to vessels.....	9,597,295	10,249,580	20,365,325

Construction work, as itemized below, was under progress during the month of February, 1922, with completion on January 31 and February 28 as shown:

	Per cent completed.	
	Jan. 31.	Feb. 28.
Fill, France Field.....	99.5	99.5
Grading of Silver City, Mount Hope.....	95	98
Construction of landing field at Naval Air Station, Coco Solo.....	50	97
Seawall and dry fill, Coco Solo.....	12	75
Construction of new concrete seawall, new Santo Tomas Hospital.....	98.5	98.5
Extension of roads, new Santo Tomas Hospital.....	60	60
Foundation of statue of Balboa.....	79	79
Extension of seawall, new Santo Tomas Hospital.....	75	97
Installation of electric duct line, new Santo Tomas Hospital.....	65	65

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	February 28, 1922.			Total occupants.		
	Men.	Women.	Children.	February, 1922.	January, 1922.	February, 1921.
Americans.....	2,413	1,890	2,226	6,529	6,358	8,511
Europeans.....	97	41	91	229	244	281
West Indians.....	4,115	2,475	5,538	12,128	12,697	11,695
Totals, February, 1922.....	6,625	4,406	7,855	18,886		
Totals, January, 1922.....	7,098	4,448	7,753		19,299	
Totals, February, 1921.....	8,593	4,565	7,329			20,487

WORKING FORCE.

The following tabulation shows the number of gold and silver employees as of February 15, 1922, by departments, together with a comparison of the working force for the preceding month, and that of February, 1921:

	Employees as of February 15, 1922.		Total employees.		
	Gold.	Silver.	February, 1922.	January, 1922.	February, 1921.
Operation and Maintenance:					
Office.....	28	56	84	71	77
Electrical.....	143	159	302	294	482
Municipal Engineering.....	76	545	621	613	949
Lock Operation.....	185	673	858	853	1,052
Dredging.....	133	616	749	765	1,250
Mechanical.....	348	565	913	965	2,583
Marine.....	157	368	525	498	827
Fortifications.....	43	258	301	290	361
Totals.....	1,113	3,240	4,353	4,349	7,561
Supply Department:					
Transportation.....	32	145	177	183	
Quartermaster.....	131	795	926	953	2,264
Subsistence.....	16	208	224	238	470
Commissary.....	175	782	957	1,039	1,766
Cattle Industry—Plantations.....	10	294	304	360	440
Hotel Washington.....	8	85	93	85	109
Totals.....	372	2,309	2,681	2,858	5,049

Includes 532 employees of the former Building Division.

	Employees as of February 15, 1922.		Total employees.		
	Gold.	Silver.	February, 1922.	January, 1922.	February 1921.
Accounting Department.....	177	7	184	187	243
Health Department.....	218	736	954	949	1,138
Executive Department.....	494	243	737	736	827
Totals.....	889	986	1,875	1,872	2,208
Panama Railroad:					
Superintendent.....	47	252	299	294	585
Transportation.....	70	107	177	182	260
Receiving and Forwarding Agency.....	61	791	852	920	1,088
Coaling stations.....	88	470	558	539	1,360
Totals.....	266	1,620	1,886	1,935	3,293
Grand totals, February, 1922.....	2,640	8,155	10,795		
Grand totals, January, 1922.....	2,691	8,323		11,014	
Grand totals, February, 1921.....	4,043	14,068			18,111

SCHOOLS.

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone, for the month of February, 1922:

	White.	Colored.	Total.
Gross enrollment.....	1,977	1,721	3,698
Net enrollment.....	1,849	1,674	3,523
Average daily attendance.....	1,552.7	1,309.3	2,862
Pupils neither absent nor tardy.....	856	542	1,398
Number of cases of tardiness.....	291	73	364
Number of teachers.....	77	32	109

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, are shown below in comparative form:

	February, 1922.	January, 1922.	February, 1921.
Material received on United States requisitions, chargeable as follows:			
Operation and Maintenance.....	\$113,754.54	\$76,817.53	\$906,113.41
Construction and equipment.....			20,318.02
Miscellaneous.....	820.74	861.65	22,583.52
Totals.....	114,575.28	77,679.18	949,014.95
Cash sales on the Isthmus:			
Stock.....	28,924.32	23,094.88	42,043.36
Fuel oil (including sales to ships).....	106.56	7,541.19	21,703.29
Scrap.....	685.83	173.77	5,076.15
Obsolete and second hand material.....	1,809.72	5,265.23	1,074.34
Totals.....	31,526.43	36,075.07	69,897.14
Sales to steamships from storehouses:			
Miscellaneous stock items.....	9,078.06	23,094.88	26,473.69
Fuel oil.....	47.64	7,541.19	18,099.17
Totals.....	9,125.70	30,636.07	44,572.86

FINANCIAL RECEIPTS AND EXPENDITURES.

	February, 1922.	January, 1922.	February, 1921.
Cash balance available for expenditure in Canal appropriations.....	\$11,996,276.91	\$11,964,761.27	\$12,449,215.86
Payments made from appropriations:			
By paymaster on the Isthmus.....	905,108.33	945,193.78	1,522,617.04
By disbursing clerk, Washington.....	157,918.57	71,160.53	980,550.80
To Panama Railroad (for commissary books).....	179,237.13	215,909.98	335,118.04

FINANCIAL RECEIPTS AND EXPENDITURES—continued.

	February, 1922.	January, 1922.	February, 1921.
Collections on the Isthmus:			
Repaid to appropriations.....	\$760,759.67	\$594,956.23	\$917,391.41
Commissary and other trust funds.....	182,034.41	218,612.32	337,891.81
Tolls.....	866,285.08	847,783.65	917,421.49
Sales of water.....	1,680.20	29,337.40	1,879.70
Postal receipts.....	8,429.78	10,782.65	11,507.27
Licenses, taxes, court fees, etc.....	3,836.97	6,348.76	6,005.11
Sales of construction material and equipment.....			1,278.30
Total collections on Isthmus.....	1,823,551.11	1,707,821.01	2,193,375.09
Collections by disbursing clerk, Washington, D. C.....	38,031.40	6,276.88	7,140.10
Deposits made with Assistant Treasurer, United States.....	51,800.00	48,800.00	56,700.00
Canal Zone and miscellaneous funds:			
Receipts—			
Money order funds.....	106,328.64	110,781.34	236,639.52
Clubhouse funds.....	29,221.05	35,270.56	56,406.88
Trust funds.....	600.00	1,024.26	1,175.95
Interest.....	1,779.15	2,900.22	1,386.92
Total receipts.....	137,928.84	149,976.38	295,609.27
Disbursements:			
Money order funds.....	80,100.00	157,573.90	156,476.00
Clubhouse funds.....	25,466.49	31,690.03	45,273.58
Trust funds.....	183.96	738.78	2,096.06
Interest.....	323.06	516.77	448.39
Total disbursements.....	106,073.51	190,524.48	204,294.03
Pay roll on the Isthmus:			
Maintenance and operation.....	614,892.77	632,606.00	1,132,979.32
Sanitation.....	69,983.00	70,722.13	85,588.94
Civil Government.....	66,065.08	67,127.91	66,218.44
Totals.....	750,940.85	770,456.04	1,284,786.70
Requisitions for purchase in the United States.....	118,223.03	221,693.59	133,644.93
Sales of commissary supplies:			
To The Panama Canal.....	73,744.15	79,773.30	140,793.07
To steamships, other than those of the United States Government and Panama Railroad.....	34,697.33	21,864.69	65,759.06
To the Panama Railroad, including steamships and Hotel Washington.....	17,597.43	16,542.51	26,164.70
To the United States Government including Army and Navy.....	64,714.25	87,052.09	246,185.53
To individuals and companies through charge accounts.....	24,869.21	24,555.36	23,193.76
To individuals purchasing coupons.....	289,640.52	291,689.06	500,152.60
Totals.....	505,262.89	521,477.01	1,002,248.81

Respectfully,

JAY J. MORROW,

Governor.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending March 25, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Laura C. Hall.....	Pacific Metals Transportation Co.....	March 21.....	March 22.....		45
Ecuador.....	Pacific Mail Steamship Co.....	March 21.....	March 22.....	3	1
Jamaica.....	Pacific Steam Navigation Co.....	March 22.....	March 22.....	1	14
Jeppia.....	United States Shipping Board.....	March 22.....	March 24.....	48	
Ceres.....	Royal Netherlands W. I. Mail.....	March 24.....	March 24.....	112	
Almagro.....	McAndrews & Co., Ltd.....	March 25.....	March 25.....	1	

Supplement No. 11 to Tariff No. 5.—Coal.—Superseding Supplement No. 10 to Tariff No. 5.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., March 22, 1922.

ITEM 21.—COAL.

(Effective February 1, 1922.)

	Cristobal- Colon.	Balboa.
1. For steamships, including warships of all nations, delivered from coaling plants, per ton of 2,240 pounds, except as provided in paragraph 2.....	\$12.00	\$15.00
2. For vessels transiting the Canal that are directed by The Panama Canal to take coal at Balboa on account of the condition of the plants, the quantity available, or for the purpose of expediting transit.....		12.00
3. For steamships, including warships of all nations, when delivered from lighters in quantities of 50 tons or more, per ton of 2,240 pounds.....	13.00	16.00
4. For steamships, including warships of all nations, when delivered from lighters in quantities of less than 50 tons, with minimum charge for 20 tons and with maximum charge not to exceed that for 50 tons at prices specified in paragraph 3, per ton of 2,240 pounds.....	15.00	18.00
5. When request is made by commander of vessel, chief engineer, or agent, for trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, an additional charge of 90 cents per ton will be made for extra handling.		
6. For lump coal for galley use, delivered in sacks, additional charge per ton, \$12. Should the vessel furnish satisfactory sacks, the charge will be only \$5 per ton additional. If delivery is made other than at the reloading side of the coaling plant, the extra cost of such special delivery will be charged in addition.		
7. For coal for cargo, delivered only by special authority of the Governor, per ton of 2,240 pounds, prices quoted on application.		
8. Special prices for coal in large quantities as specified below, taken from alongside coaling plants:		
(a) To vessels taking 1,200 tons or over;		
(b) To vessels taking between 825 and 1,200 tons and bunkering full;		
(c) To vessels taking 825 or more tons and more than quantity required to bunker full;		
Price to above three classes, per ton of 2,240 pounds	10.00	13.00
(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at the prices specified in paragraph (c).		
(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at the prices specified in paragraph (c).		
(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plants at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds.....	1.00	1.00
(g) If less than 50 tons are delivered in lighters paragraph 4 will apply.		
(h) The Cristobal rates will apply to coal for vessels transiting the Canal taken at Balboa by direction of The Panama Canal.		

JAY J. MORROW,
Governor, The Panama Canal.
President, Panama Railroad Company.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, February, 1922.*

From—	NORTH AMERICA.										EUROPE.										Grand totals.	Per cent of total cargo.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	UNITED STATES.					CANADA.					Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Sweden.	Spain.			Europe. ²	Total, Europe.	East coast of South America.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	Canada.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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* Figures represent tons of 2,240 pounds. General cargo not routed so as to allow segregation between definite ports.

FROM—	SOUTH AMERICA.					NORTH AMERICA.					ASIA.					AUSTRALASIA.		Grand totals.	Per cent of total cargo.		
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America.	Total, South America.	West coast of United States.	Canada.	West coast of Central America.	Balboa, C. Z.	Total, North America.	China.	Japan.	Philippines.	Far East.	Total, Asia.	Australia.			New Zealand.	Total, Australasia.
UNITED STATES:																					
North Atlantic ports.....	10,225	410	3,696	5,431	19,762	85,066	3,433				88,499	12,168	71,469	3,505	3,753	90,895	11,900	11,465	23,365	222,521	50.3
South Atlantic ports.....						500					500	1,078	2,574			3,652				4,152	0.9
Gulf ports.....	1,705		26	38	1,769	26,693	2,000				28,693	1,453	35,643	1,863		38,959		6,635	6,635	76,056	17.2
Total, United States.....	11,930	410	3,722	5,469	21,531	112,259	5,433				117,692	14,699	109,686	5,368	3,753	133,506	11,900	18,100	30,000	302,724	68.4
East coast of Mexico.....	27,037				27,037					6,700	6,700		8,000			8,000				41,737	9.4
Atlantic terminus, Cristobal, C. Z.....	1,470	432	562	801	3,265				2,798		2,798		7,400			12,650				6,083	1.3
West Indies.....						140					140	5,250								12,790	2.9
East coast of Canada.....																	2,412	1,003	3,415	3,415	0.8
Total, North America.....	40,437	842	4,284	6,270	51,833	112,399	5,433	2,798	6,700	127,330	19,949	125,086	5,368	3,753	154,156	14,312	19,103	33,415	366,734	82.8	
EUROPE:																					
Belgium.....	7,443				2	750					750									752	0.1
British Isles.....			2,629	3,119	2,736	15,927	6,567	1,943			8,510						1,603	28,691	30,294	54,731	12.3
France.....	438		450	202	1,090															1,090	0.2
Germany.....	1,069		2,170	1,966	5,205															5,205	1.1
Holland.....	275		1,600	85	1,960															1,960	0.4
Sweden.....			1,001	132	1,133	222					222									1,355	0.3
Europe.....						3,984					3,984									3,984	0.9
Total, Europe.....	9,225		7,850	5,504	2,738	25,317	11,523	1,943			13,466						1,603	28,691	30,294	69,077	15.6
East coast of South America.....		808					6,206				6,206									7,014	1.6
Grand totals.....	49,662	1,650	12,134	11,774	2,738	77,958	130,128	7,376	2,798	6,700	147,002	19,949	125,086	5,368	3,753	154,156	15,915	47,794	63,709	442,835	100.0
Per cent of total cargo:																					
February, 1922.....	11.2	0.3	2.7	2.6	0.6	17.6	29.4	1.6	0.6	1.5	33.2	4.5	28.2	1.2	0.8	34.8	3.6	10.8	14.4	100.00	
January, 1922.....	12.0	0.2	0.7	2.1	15.0	27.6	5.7	1.0	2.1	36.6	4.8	24.2	1.5	0.1	1.5	30.6	3.3	11.5	15.0		
February, 1921.....	27.7	0.1	0.2	1.3	8.0	37.3	22.4	2.1	1.4	1.9	29.7	7.5	3.2	0.1	7.2	18.0	7.2	6.1	15.0		

* General cargo not routed so as to allow segregation between definite ports.

* Figures represent tons of 2,240 pounds.

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, March 25, 1922.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Carolyn	18	19	43	19	6	17	19	17	00	19	313.0	46.0	22.0	New Orleans	Tacoma	Sulphur, general.	4,000	3,462	2,384
Santa Rosa	19	4	47	19	7	45	19	17	11	19	404.6	53.0	14.6	New York	Mejillones	Ballast	6,744	4,804	
Dakota	19	5	26	19	8	20	19	18	06	19	407.7	53.7	21.0	New York	Los Angeles	General	1,918	7,156	5,058
Edward Sewall	18	17	20	19	8	57	19	19	33	19	332.0	45.3	20.0	New Orleans	San Francisco	General	4,200	3,274	2,906
Rancon Maru	19	8	00	19	9	15	19	19	26	19	400.0	51.0	24.0	New York	Kobe	General, steel	5,816	5,559	4,106
Essequibo	19	6	11	20	6	24	20	12	46	19	450.0	50.0	23.7	New York	Valparaiso	General	2,066	9,099	6,117
Santa Eulalia	20	6	20	20	11	15	20	19	05	20	251.0	43.6	22.11	New York	Los Angeles	General	2,806	2,823	1,730
Swine	20	23	52	21	6	50	21	15	37	22	385.0	53.7	21.0	Cardiff	San Francisco	Coal	5,587	5,420	4,035
Laurea C. Hall	5	15	15	21	6	24	21	15	37	22	81.0	26.0	9.0	Cristobal	Buenaventura	General	26	132	72
Saeta	21	15	15	21	6	30	21	15	37	22	322.0	43.11	21.0	Cristobal	Balboa	Coal, supplies	2,709		
Cesar	19	19	40	21	7	30	21	16	52	21	380.0	48.0	24.0	Hampton Rds	San Francisco	General	1,155	5,926	4,178
Encador	20	6	00	21	8	05	21	15	41	21	229.2	36.0	14.6	Baltimore	Seattle	General	20	1,362	891
Baybimo	21	6	23	21	9	19	21	18	07	21				Cardiff					
Gen. H. F.	18	12	42	21	10	50	21	18	15	21	323.5	39.0	16.7	New York	Guayaquil	General	409	3,013	1,574
Holmes	18	20	03	22	6	20	22	13	21	22	215.0	33.0	12.10	Cristobal	Acapulco	General	243	1,213	692
Salvador	19	5	50	22	6	05	22	13	23	22	220.0	34.0	12.6	Pto. Colombia	Tumaco	General, salt	279	1,187	622
Uman	22	6	35	22	7	07	22	15	45	22	400.0	53.0	25.0	New Orleans	Yokohama	General	7,128	5,930	4,277
Uman Maru	22	6	47	22	8	43	22	17	25	24	402.6	53.0	25.0	New York	Yokohama	General	8,026	6,576	4,886
Albany	22	6	47	22	8	43	22	17	25	24									
Gen. Wm. Graham	22	6	47	22	8	43	22	17	25	24									
Imperial	19	15	47	22	10	15	22	18	37	22	360.8	41.2	24.0	Cristobal	Balboa	General	810	3,296	2,156
Santa Barbara	22	11	15	22	11	30	22	19	18	22	402.4	54.0	15.6	New York	Valparaiso	Ballast	6,789	4,746	
Arizonan	21	9	05	22	11	49	22	22	10	22	484.0	57.0	30.9	High seas	Antofagasta	General	12,000	9,158	6,970
Hoboken	21	16	45	22	12	15	22	20	19	23	380.4	53.1	22.2	New Orleans	Balboa	General	5,500	5,659	4,138
Kandahar	22	9	00	22	12	17	22	20	23	23	434.0	55.0	27.9	New York	Seattle	General	8,690	7,677	5,912
Grand Guard	22	9	00	22	12	17	22	20	23	23	420.0	54.0	27.8	New York	Yokohama	General	9,350	6,963	5,051
Edgar F. Luckenbach	22	8	40	23	9	15	23	16	50	23	425.0	57.0	25.0	New York	Yokohama	General	5,000	8,568	6,696
Havre Maru	23	6	20	24	6	30	24	15	44	25	400.0	53.0	25.6	New York	Kobe	General	6,938	5,886	4,284
Ceres	23	13	55	24	7	15	24	16	10	25	348.0	48.2	13.6	Amsterdam	Corral	General	1,044	4,243	3,123
City of Pittsburgh	24	10	20	24	10	20	24	17	38	24	465.0	58.0	26.0	New York	Brisbane	General	6,360	9,660	7,415
Byo Maru	23	20	52	25	6	20	25	17	31	25	400.0	53.0	25.8	New York	Yokohama	General	7,343	5,969	4,414
Tiokti	21	16	51	25	11	10	25	14	35	25	170.6	30.0	10.9	Glasgow	Neison	Ballast	660	253	
Maha	25	11	40	25	12	00	25	18	43	25	477.0	63.0	27.0	London	Auckland	Coal	6,504	11,026	7,912

*Tug.

*Bark.

*Collier.

* Mine planter.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

	18	14	00	19	6	30	19	14	50	19	20	07	British	New Zealand Shipping Co.	400	0	58	2	22	6	Wellington...	Amsterdam...	General	5,361	9,057	6,438
Kaikoura...	18	14	00	19	6	30	19	14	50	19	20	07	British	New Zealand Shipping Co.	400	0	58	2	22	6	Wellington...	Amsterdam...	General	5,361	9,057	6,438
City of Lincoln...	18	19	00	19	7	48	19	15	04	19	17	45	British	Hall Line, Ltd.	422	0	53	0	26	0	Portland...	Leith	General	8,200	7,026	5,323
Imperial...	19	5	00	19	8	20	19	15	47	19	18	45	British	Chilean Line...	336	8	41	2	23	0	Talcahuano...	Cristobal	General	192	3,296	2,156
Clan Chastan...	19	10	45	19	11	38	19	19	20	19	24	00	British	Cayzer Irvins & Co.	359	0	48	1	22	3	Port Lincoln...	United King.	General	8,510	4,190	3,036
K. R. Kingsbury	19	11	15	19	12	27	19	20	40	20	6	15	American	Standard Oil Company of Cal.	440	0	58	2	29	0	San Francisco	London	Lubricating oil	11,000	9,033	5,938
Walter A. Luckenbach...	19	12	05	19	12	57	19	20	25	19	20	25	American	Luckenbach Line...	446	5	56	1	24	0	Portland...	Boston	General	5,100	8,785	5,938
Santa Elisa...	20	7	15	20	8	43	20	15	12	20	17	10	American	Grace Line	360	3	51	7	23	1	Talcahuano	New York	General	4,211	5,957	4,325
San Joaquin...	21	3	00	21	12	18	21	19	25	21	20	22	Norwegian	W. Wilhelmsen	425	4	57	1	19	0	Tocopilla	Tampico	Ballast	7,059	5,043	
Holmia...	21	18	30	22	7	22	22	16	10	22	18	40	Swedish	Swedish Lloyd	275	0	41	0	18	6	Tocopilla	New Orleans	Nitrate	2,650	2,323	1,431
Princess...	22	7	40	22	8	40	22	18	22	22	22	30	American	Equitable Trust Co.	428	9	47	7	25	4	Seattle	New York	(s)	3,687	5,129	3,251
Radames...	22	4	00	23	7	09	23	16	23	23	17	42	German	Kosmos Line...	380	8	47	0	22	0	Valparaiso	Hamburg	General	4,591	4,971	3,488
Eger...	23	11	30	23	12	05	23	19	35	24	15	36	Norwegian	Camillo Etisen & Co.	231	5	35	2	13	6	Guayaquil	New York	General	612	1,471	999
Quilpué...	24	11	24	24	12	26	24	19	50	25	18	22	British	Pacific Steam Navigation Co.	361	2	46	0	20	3	Valparaiso	London	Wool, nitrate	2,165	4,741	3,023
Hague Maru...	25	7	15	25	7	58	25	15	15	25	18	22	Japanese	Osaka Steam Kaisha	407	2	50	8	23	0	Singapore	New York	General	6,307	6,202	4,507
Almagro...	25	7	30	25	8	37	25	16	40	26	21	40	British	MacAndrews & Co.	303	4	43	0	16	0	Guayaquil	New York	General	408	2,878	1,714
Floridian...	25	7	45	25	9	32	25	17	50	26	3	05	American	American-Hawaiian Line	415	0	53	7	28	5	Seattle	Hamburg	(*)	8,804	7,273	5,105

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

s Lumber and shingles.

e Wheat, flour, and general.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
March 19.	Zacapa.	United Fruit Co.	New Orleans via Habana.	March 19.	Barranca ² .	Bisso Towboat Co.	New Orleans.
March 20.	Cartago.	United Fruit Co.	New Orleans.	March 19.	Puerto Rico.	French Line.	Puerto Colombia.
March 20.	Killing ² .	Lindsay, Swann Hunter	Galera Bay.	March 20.	Zacapa.	United Fruit Co.	Bocas del Toro.
March 20.	Nemesia.	Lindsay, Swann Hunter	Cartagena.	March 21.	Columbia.	N. O. & S. A. S. Line.	New Orleans.
March 20.	Garfield.	W. R. Grace & Co.	Galera Bay.	March 22.	Camden.	United Fruit Co.	Tampico.
March 20.	Columbia.	N. O. & S. A. S. Line.	Puerto Colombia.	March 22.	Van Rensselaer.	Royal Netherlands W. I. Mail.	Port Limon.
March 21.	Van Rensselaer.	Royal Netherlands W. I. Mail.	Amsterdam.	March 23.	Advance.	Panama Railroad Steamship Line.	Puerto Colombia.
March 22.	Gen. G. W. Goethals.	Panama Railroad Steamship Line.	High seas.	March 23.	Sixola.	United Fruit Co.	New York via Kingston.
March 22.	Sixola.	United Fruit Co.	Colombian ports.	March 23.	Santa Marta.	United Fruit Co.	New York via Colombia and Jamaica.
March 22.	Santa Marta.	United Fruit Co.	New York via Kingston.	March 23.	Zacapa.	United Fruit Co.	New Orleans.
March 22.	Bolivar ⁷ .	Colombian Government.	Cartagena.	March 23.	Cartago.	United Fruit Co.	New Orleans via Bocas del Toro and Habana.
March 22.	Guarde Costa No. 2.	Colombian Government.	Bocas del Toro.	March 24.	Colon.	Panama Railroad Steamship Line.	New York via Haiti.
March 23.	Zacapa.	United Fruit Co.	New York via wayports.	March 25.	Ulua.	United Fruit Co.	New York via wayports.
March 24.	Ulua.	United Fruit Co.	Port Limon.	March 25.	San Bruno.	United Fruit Co.	Boston.
March 25.	San Bruno.	United Fruit Co.	Port Limon.	March 25.	Van Rensselaer.	Royal Netherlands W. I. Mail.	Puerto Colombia.
March 25.	Van Rensselaer.	Royal Netherlands W. I. Mail.	Liverpool via wayports.				
March 25.	Asian.	Levland Line.					

PORT OF BALBOA.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
March 22.	Jeptha.	General Steamship Corp. (S. B.).	San Antonio, Chile.	March 23.	Jeptha.	General Steamship Corp. (S. B.).	San Francisco.
March 25.	Almirante La Torre ² .	Chilean Government.	Mejillones, Chile.				

*Other than ships passing through the Canal.

s Motor ship.

Notice to Steamship Lines.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., March 17, 1922.

1. While not soliciting agencies for steamship lines The Panama Canal and the Panama Railroad Company, acting as one entity, are prepared to act as agent for any steamship line which, for any reason, desires such service from the Canal organization.

2. On and after June 1, 1922, such agency work will be taken over by the Superintendent, Panama Railroad Company, acting as agent through the Receiving and Forwarding Agent at Cristobal.

3. For the above service the following charges will be made:

Fee for each ship handled..... \$25.00
Percentage charged for all funds advanced to cover disbursements of ship..... 2½ percent

4. All vessels appearing at the Canal for transit with no services required other than the ordinary fueling and supplies, when the latter are procured from the Panama Railroad supply plants, will be exempt from payment of the agent's fee of \$25.

JAY J. MORROW,
Governor, The Panama Canal,
President, Panama Railroad Company.

Notice to Mariners.—San Jose Island Light.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., March 22, 1922.

The Panama Railroad steamship *Gen. H. F. Hodges* reports that at 11.30 p. m., March 21, 1922, the San Jose Island light was not burning.

This light will be put in service shortly by The Panama Canal.

JAY J. MORROW,
Governor.

Notice to Mariners.—Menaces to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., March 23, 1922.

Master Paulsen of the steamship *Ecuador* radioed to-day:

Passed tree 4 feet in diameter, 2 feet out of water, current SSW. ½ knot, latitude 7° 15' N., longitude 81° 59' W, at 11 a. m. to-day.

JAY J. MORROW,
Governor.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending March 25, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Puerto Rico.....	French Line.....		March 19.....		442
Zacapa.....	United Fruit Co.....	March 19.....	March 20.....	(¹)	353½
Essequibo.....	Pacific Steam Navigation Co.....	March 19.....	March 20.....	110	192
Salvador.....	Pacific Steam Navigation Co.....		March 22.....		374
Jamaica.....	Pacific Steam Navigation Co.....	March 19.....	March 22.....	18	109
Imperial.....	Chilean Line.....	March 19.....	March 22.....	192	838
Gen. H. F. Hodges.....	Panama Railroad Steamship Line.....		March 21.....		101
Ecuador.....	Pacific Mail Steamship Co.....	March 20.....	March 21.....	184	405
Columbia.....	N. O. & S. A. S. S. Co.....	March 20.....	March 21.....	65	515
Cartago.....	United Fruit Co.....	March 20.....	March 23.....	509	3½
Van Rensselaer.....	Royal Netherlands W. I. Mail.....	March 21.....	March 22.....	21½	(¹)
Santa Marta.....	United Fruit Co.....	March 22.....	March 23.....	123	200
Sixacha.....	United Fruit Co.....	March 22.....	March 23.....	1	3
Zapapa.....	United Fruit Co.....	March 23.....	March 23.....	½	½
Advance.....	Panama Railroad Steamship Line.....		March 23.....		11
Colon.....	Panama Railroad Steamship Line.....		March 24.....		2,091
Elger.....	Caribbean Steamship Line.....	March 23.....	March 24.....	176	(¹)
Ceres.....	Royal Netherlands W. I. Mail.....	March 23.....	March 24.....	184	(¹)
Ulua.....	United Fruit Co.....	March 24.....	March 25.....	200	111
Alvarado.....	Pacific Steam Navigation Co.....	March 24.....		75	
San Bruno.....	United Fruit Co.....	March 25.....	March 25.....	23	167
A-san.....	Levland Line.....	March 25.....		607	
Almagro.....	Pacific Steam Navigation Co.....	March 25.....		378½	
Murla.....	Roland Steamship Line.....	March 25.....		118	
Van Rensselaer.....	Royal Netherlands W. I. Mail.....	March 25.....		16	

* No cargo discharged.

* No cargo laded.

The Practical Spirit.

The following is translated from an article "La traversée du Canal de Panama" appearing in *L'Opinion*, of Paris, of February 11, 1922:

* * * Perhaps this piece of news will direct public attention to the Canal. We in France have too little appreciation of the immense services it renders to commerce—services of every description—for in the operation of this great enterprise the eminently practical spirit of the Americans has had free rein. In the course of a recent voyage I had occasion to convince myself of this.

Those who are disheartened by the incomprehensible administrative procrastination and stupidities of government will do well to take a trip through the Panama Canal, and see what can be done by a modern and progressive people.

A ship arrives at the Atlantic terminal, it is in a hurry and does not want to lose time by calling at Colon. But it requires to replenish its stores and fresh water supply, to have its linen laundered, and what not besides. As soon as it is signaled in the harbor at Colon a fast launch comes out to meet it, arranges for its passage through the Canal, books the orders, removes the soiled linen. There is no chin wagging and no unnecessary gestures. The ship steams on through the Canal between banks covered with palms, trailing vines, and banana plants. There are 3 locks to pass, at Gatun, at Pedro Miguel, and at Miraflores, and then the ship is in Panama Bay on the Pacific. Eight hours have sufficed to pass from ocean to ocean. A tug comes out to meet the ship. It brings fresh water, provisions of all kinds, tons of ice, stems of bananas, and—miraculously—the linen, left but a few hours before at the other end of the Canal, and now washed, ironed, and, if desired, even starched.

This is what the Americans have done at Panama. The practical spirit has its advantages.

Memorial in Panama to the French Canal Builders.

The courtyard of Chiriqui Prison, formerly barracks for Colombian soldiers, with the adjacent Plaza de Armas, at the point of the peninsula on which the city of Panama is built, has been made into a park and named the Plaza de Francia. At the south end of the plaza, adjacent to the old sea wall, is being erected a memorial to the French who died in an effort to build the Panama Canal. The corner stone of the memorial was laid on July 14, 1921, by General Mangin, of France, while on a diplomatic tour of Latin-American countries.

The central feature of the memorial is an obelisk, 18 meters (59.06 feet) in height, surmounted by the French cock and adorned at the base by bas reliefs. Back of the obelisk is a semicircular gallery or arcade, in which are to be placed 10 tablets of stone, each 10 feet high by 6 feet wide, carved with scenes and legends representing the history of the Canal. Busts of Ferdinand de Lesseps, Lieut. Lucien Bonaparte Wyse, Armand Reclus, and Pedro J. Sosa, distinguished in the French Canal work, will form a part of the memorial.

The memorial is being paid for by contributions from governments, societies, and individuals. The committee in charge states that about \$25,000 has been expended and approximately \$5,000 is yet needed to bring the work to completion. Contributions may be addressed to the President of the Building Committee of the French Memorial, Mr. M. de Simonin, Charge d'Affaires of France, Panama, R. P.

THE PANAMA CANAL RECORD of March 17, 1915, in connection with the passage of the first French vessel through the Canal, reviewed briefly the history of the French work on the Isthmus. The concluding paragraph of the review stated:

The French spent close to \$250,000,000 on the Isthmus and lost about 6,283 lives in their attempts to build the Canal. Hundreds of the men who lost their lives in the French service are buried in the cemeteries on the Isthmus, where since have gone to join them hundreds who continued their work under the American flag. The French régime, 1881 to May 4, 1904, and the American, from the latter date to the present, have lost approximately equal numbers of employees by death.

Protection for Fishermen at Gatun Spillway.

As a matter of protection to people fishing for tarpon at the end of the concrete discharge channel below the spillway of Gatun Lake, pipe railing fences have been erected on the side walls for a distance of 75 feet from the lower ends of the walls. Signs, devised especially for the information of visitors, have been erected on either side of the spillway, near the guard rails, reading as follows:

WARNING.

Fishing from the top of walls is prohibited except from behind rail fence.

Fishing by any other means than rod and reel is prohibited.

Fishing from spillway floor or apron is dangerous unless shoes are equipped with cleats.

Several fatal accidents have occurred among fishermen at the spillway, usually as the result of being pulled in by a large fish which struck while the fisherman was on one of the side walls, or from the fisherman's having lost his footing on the slippery floor and going into deep water beyond the end of the apron.

The fishing below the spillway, especially for tarpon, is excellent and attracts many visitors as well as local sportsmen. The Canal Zone Tarpon Club has a clubhouse near the spillway.

Binders for The Panama Canal Record.

Cardboard covers, punched and fitted with brass fasteners, forming binders for THE PANAMA CANAL RECORD, are offered for sale at 25 cents a set, for the benefit of those who wish to keep a file of the current issues for ready reference. Orders may be addressed to The Panama Canal, Balboa Heights, Canal Zone, or The Panama Canal, Washington, D. C.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
William Hannah.....	49411	Jamaica.....	Colon.....	Health Department....	March 9, 1922.
Julian Martin.....	39747	Colombia.....	Monte Lirio.....	Panama Railroad Co....	March 12, 1922.
Isaac Russell.....	58396	Nassau.....	La Boca.....	Panama Railroad Co....	March 12, 1922.

Official Circular.

Purchasers at Cristobal Commissary.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., March 23, 1922.

To all concerned—In order to prevent unauthorized persons from purchasing goods at Cristobal Commissary while the cash system is being tried out, until the end of April, it is necessary to require all patrons on entering the commissary to show their authority card for purchase of coupon books, or other satisfactory evidence establishing their authority to purchase goods at the commissary.

The General Manager, Commissary Division, upon request, will provide special forms for identification to be issued to silver employees of the Canal and the military organizations in the Cristobal and Gatun districts.

JAY J. MORROW,
Governor.

Sale of Tugboat "Empire."

Sealed bids in triplicate will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., and also at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, not later than 10.30 a. m. on the 17th day of April, 1922, at which time they will be opened in public simultaneously in both offices, for the purchase of the seagoing tugboat *Empire*, 120 feet over-all length, located at Balboa, Canal Zone. Detailed information with photographs, if desired, and form of proposal (Circular No. 1471) may be had upon application to the offices of the General Purchasing Officer or the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids in its discretion.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Engineering

APR 2 1922

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical
information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., April 5, 1922.

No. 34.

Fire on the "Iowan."

The steamer *Iowan* of the American-Hawaiian Line arrived at Balboa at 4.15 in the afternoon of March 31 with fire in the No. 1 hold. Advice of the situation had been sent by radio and forces of the Canal Zone Fire Department were in readiness to work on the ship upon her arrival. The master had filled the hold with sulphur gas and kept the fire under control, and the work of the fire department was to remove enough cargo to locate the center of the fire, and extinguish it. This was accomplished in about 24 hours, though on account of the gas it was difficult to tell just when all of the goods that were smouldering had been removed.

The fire is believed to have been due to spontaneous combustion in baled wool. The *Iowan* reloaded the discharged cargo, with the exception of a small quantity of ruined wool, and continued on her voyage on April 5. She is bound from Seattle to New York with lumber and general cargo.

Collision off Atlantic Entrance to Canal.

A collision occurred between the steamers *Woolsum* and *West Himrod* beyond the Atlantic entrance to the Canal in the evening of April 2, in consequence of which both ships were damaged. The *Woolsum* was leaving the Canal, and the *West Himrod* approaching. The outgoing ship had dropped her pilot and the incoming had not taken one aboard. An investigation has been made by the Board of Local Inspectors but report has not yet been completed.

The *Woolsum* will return through the Canal to go into dry dock at Balboa; the *West Himrod* is able to continue her voyage.

Chilean Dreadnaught Returns to Balboa Dry Dock.

The Chilean dreadnaught *Almirante Latorre* arrived at Balboa in the afternoon of March 25, and went into the 1,000-foot dry dock at 1 o'clock, March 29, for cleaning and painting and miscellaneous minor repairs to the hull below the water line. The ship came out of the dry dock on April 1, at 3 p. m., and sailed for Valparaiso on April 4.

The *Almirante Latorre* was in dry dock at Balboa last year, January 14 to 16, at the time of her passage through the Canal on her way out to Chilean waters from Great Britain, where she was built. She has returned for the necessary periodic dry docking. The dry dock at Balboa is the only one south of the United States large enough to receive this ship, which has a displacement of 32,000 tons and is 624 feet in length by 92 feet beam.

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, April 1, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	To—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.	
Pennsylvania	25	15	31	26	6	30	26	13	44	26	14	46	10	American.	American-Hawaiian Line.	Seattle.	General.	3,600	7,197	4,916
Madawaska.	25	16	04	26	7	05	26	14	51	26	15	16	10	British.	Bank Line, Ltd.	Yokohama.	Sugar.	6,740	5,481	4,174
La Brea	25	23	40	26	8	30	26	17	10	26	19	43	23	American.	Union Oil Co.	Antofagasta.	Oil.	3,480	4,765	3,480
Murchison	25	22	22	26	12	03	26	18	48	26	20	00	German.	Roland Line.	Corinto.	General.	336	2,188	1,361	
Canadian	26	12	44	26	12	55	26	20	25	26	22	40	26	British.	Canadian Government.	Brisbane.	General.	5,000	8,892	4,186
Miller	27	5	08	27	8	00	27	16	37	27	17	35	27	American.	Eller Steel Steamship Co. (S. B.).	Seattle.	General.	8,298	7,893	5,621
Neposet	27	13	23	27	11	28	27	17	47	27	18	53	27	Norwegian.	P. Johnsen.	Guayaquil.	General, coffee.	58	1,851	1,179
Albatross	27	11	48	27	12	12	27	19	06	27	20	32	27	Norwegian.	W. Wilhelmsen.	Puerto Lobos.	Crude oil.	8,082	7,053	5,051
La Haina	27	11	48	27	12	12	27	19	06	27	20	32	27	Norwegian.	W. Wilhelmsen.	Puerto Lobos.	Crude oil.	8,082	7,053	5,051
Indiana	27	7	30	28	6	20	28	13	13	28	14	30	28	French.	French Line.	Guayaquil.	General.	812	7,157	4,936
West Coast	27	21	37	28	7	00	28	16	35	28	14	30	28	American.	Barber Line (S. B.).	Guayaquil.	General.	9,706	7,946	5,698
Thomas P. Beal	27	2	47	28	8	35	28	17	21	28	18	24	28	American.	Crowell & Thurlow.	Seattle.	General.	5,000	7,047	4,998
Brush	28	4	56	28	9	15	28	18	23	28	19	34	28	American.	N. Atl. & Western S. S. Co.	Boston.	General.	4,141	6,161	4,292
Manitow	28	15	13	28	11	00	28	19	33	28	20	46	28	Peruvian.	Peruvian Steamship Line.	Portland, Me.	General.	373	838	2,959
Santa Teresa	28	12	27	29	6	10	29	15	46	29	18	00	29	American.	W. R. Grace & Co.	Cristobal.	General.	2,068	5,726	4,086
Alvarado	24	1	38	29	6	10	29	15	47	29	19	22	29	British.	McAndrews & Co.	Talcahuano.	General.	764	2,844	1,748
Harry Luckenbach	28	21	06	29	7	30	29	16	51	29	18	00	29	American.	Luckenbach Line.	Los Angeles.	General.	3,100	9,262	6,853
enbach	29	1	20	29	8	20	29	18	04	29	7	52	29	British.	Bank Line, Ltd.	Kobe.	General.	9,000	8,238	6,270
Survey	29	1	32	29	9	00	29	19	16	29	13	55	29	American.	Nawson Line (S. B.).	Portland, Ore.	General.	1,442	6,759	4,900
West Isla	29	2	50	29	9	26	29	19	30	29	20	45	29	American.	Luckenbach Line.	San Francisco.	General.	3,700	4,808	3,708
Hattie Luckenbach	28	23	07	29	11	35	29	20	30	29	21	50	29	American.	United States Steel Products Co.	Los Angeles.	(a)	8,557	7,539	5,448
Chattanooga	29	8	50	29	12	05	29	21	50	29	23	20	29	British.	Tank Storage and Carriage Co.	Shanghai.	Case oil.	7,000	6,532	4,920
City	28	16	18	29	10	06	29	22	43	29	23	49	29	French.	French Line.	Manzanillo.	General.	6,200	5,857	4,166
Saint Louis	28	16	18	29	10	06	29	22	43	29	23	49	29	French.	French Line.	Manzanillo.	General.	6,200	5,857	4,166
S. C. 284	30	7	10	30	14	01	30	19	04	30	19	04	30	American.	United States Navy.	Balboa.	Petroleum, gas.	6,340	5,301	3,866
Aspen	29	17	20	30	9	20	30	16	35	30	19	04	30	British.	Standard Transportation Co.	Yokohama.	General.	8,537	7,634	5,553
Steel Sealers	29	21	04	30	10	40	30	17	50	30	19	04	30	American.	United States Steel Products Co.	Seattle.	General.	1,380	3,173	2,163
Newport	26	17	55	31	6	05	31	13	35	31	17	36	31	German.	Pacific Mail Steamship Co.	San Francisco.	General.	4,400	4,791	3,374
Roland	30	15	31	31	6	32	31	14	20	31	15	34	31	German.	Roland Line.	Guayaquil.	General.	6,900	8,515	6,063
Kinderjke	30	7	35	31	7	09	31	16	57	31	18	04	31	Dutch.	Holland-American Line.	Vancouver.	General.	2,500	9,381	6,915
Port Pirie	30	12	05	31	8	00	31	17	50	31	18	43	31	British.	Commonwealth and Dom. Line.	Auckland.	General.	3,300	7,150	4,913
Mississippi	31	5	07	31	8	58	31	19	16	31	19	52	31	American.	American-Hawaiian Line.	Los Angeles.	General.	5,200	5,141	3,563
Cape Roman	31	5	07	31	9	27	31	20	03	31	21	17	31	American.	All. Gulf & Pac. S. Co. (S. B.).	Seattle.	General.	5,200	5,141	3,563
Cauca	28	20	10	31	10	35	31	20	10	31	21	31	31	British.	Pacific Steam Navigation Co.	Champerico.	General.	637	1,589	1,013
David Putnam	31	6	15	31	6	15	31	6	15	31	6	15	31	American.	United States Army	Balboa.	General.	637	1,589	1,013

* 65,000 barrels.

* Tin plate, steel, and general.

* Motor ship.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Katrina Luckenbach	26	6	30	26	7	53	26	14	45	26	16	45	American	Lockenbach Line	446	0	56	2	21	0	Everett	New York	(s)	4,081	8,508	6,179
Newport	26	6	45	26	10	53	26	17	10	31	6	05	American	Pacific Mail Steamship Co.	326	0	38	2	19	8	San Francisco	Cristobal	(s)	2,120	3,173	2,163
Canadian	27	2	30	27	8	10	27	14	55	27	16	38	British	Canadian Government	400	3	52	0	18	6	Newcastle	Halifax	(7)	2,388	5,842	4,092
Clape Henry	27	2	30	27	8	20	27	16	10	27	16	10	American	Atlantic Gulf-Pacific Line	376	4	52	8	15	6	Puget Sound	Baltimore	General, lumber	4,100	5,148	3,523
Ebro	27	4	04	27	9	52	27	17	31	27	21	35	British	Pacific Steam Navigation Co.	450	2	57	10	27	0	Valparaiso	New York	General	11,200	9,151	6,227
D. G. Scofield	27	9	25	27	10	57	27	20	10	27	23	55	American	Standard Oil Co. of California	439	5	58	0	28	6	San Francisco	Philadelphia	Lubricating oil	4,100	8,012	6,254
Medice	27	15	00	30	6	40	30	15	05	31	9	15	American	United States Treasury Dept.	220	0	39	0	17	0	San Francisco	Norfolk	Ballast	1,499	203	
Gen. W. M. Graham	28			28	7	14	28	14	00				American	U. S. Army	156	0	32	0	13	0	Balboa	Cristobal	Phosphate	7,500	5,893	4,118
Bradyde	28	11	25	28	12	15	28	21	20	29	12	05	British	Leeds Shipping Co.	399	6	53	0	25	8	Nauru Islands	Stettin	Coffee, sugar	1,580	1,018	
Cauca	28	12	30	28	13	25	28	20	05	30			British	Pacific Steam Navigation Co.	246	0	35	2	17	0	Champerico	Cristobal	Gasoline	8,222	7,433	5,058
Hummata	28	16	35	29	7	05	29	10	53	30	9	55	American	United States Shipping Board	435	0	56	0	17	0	San Francisco	Thames Hav'n	General, lumber	5,546	6,209	4,317
Blue Triangle	28	17	04	29	7	45	29	10	38	29	21	32	American	United States Shipping Board	390	0	54	2	22	8	San Francisco	New York				
Birmingham City	28	19	30	29	8	50	29	17	27	29	19	30	American	United States Steel Product Co.	395	5	55	0	27	0	Vancouver	London	(s)	7,304	6,841	4,686
Caddo	28	20	30	29	9	58	29	18	06	29	18	06	American	Standard Oil Co. of New Jersey	413	3	55	3	28	6	Talara	New York	Coal test oil	8,907	9,337	4,442
Lompoc	28	22	00	29	11	29	29	19	31	29	19	55	British	C. T. Bowring & Co.	433	3	55	9	21	0	Liquique	Tampico	Ballast	7,490	5,311	
Winifred	29	10	00	29	12	25	29	20	30	30	3	55	American	Williams Steamship Co.	434	3	57	7	24	0	Portland	New York	General, lumber	8,700	7,985	5,881
Quincy	29	13	00	30	6	55	30	10	05	31	6	07	American	United States Navy	350	0	51	0	18	0	Nare Island	Philadelphia	Navy stores	1,000		
Armen	29	15	15	30	7	53	30	15	35	30	16	55	Danish	Orient Steamship Co.	385	0	53	3	20	0	Portland	Copenhagen	General	6,192	6,008	4,065
Deendil	29	21	00	30	8	40	30	17	10	30	19	10	American	Elder Steel Steamship Co.	450	0	57	6	21	0	Portland	Baltimore	General	1,000	7,893	6,047
Barrymore	29	22	40	30	10	02	30	10	02	30	17	45	British	Furness Withly & Co.	419	6	55	0	23	6	Vancouver	New York	General	3,105	6,928	4,023
Steel Navigator	30	1	15	30	11	32	30	19	45	30	22	35	American	United States Steel Products Co.	424	2	56	2	23	0	Vancouver	Boston	General, lumber	6,751	7,034	5,558
Jamaica	30	15	00	31	6	38	31	14	10				British	Pacific Steam Navigation Co.	220	0	34	0	11	3	Tumaco	Pto. Colombia	Cocoa	41	1,187	622
S. C. 284	31			31	6	43	31	13	35				American	United States Navy	110	0	16	0			Balboa	Cristobal	General	1,600	3,819	2,632
Jan Van Nassau	31	3	00	34	7	47	31	15	30	25			Dutch	Royal Netherlands W. I. Mail	346	2	44	3	25	0	Talcahuano	Hamburg	General	6,750	7,047	5,030
A. L. Kent	31	7	30	31	9	00	31	16	25	31	16	25	American	Crowell & Thurlow	394	1	55	6	25	6	Everett	New York	General			
Presidente Leguia	31	3	00	31	13	24	31	22	08				Peruvian	Gaite & Sevilla	312	3	49	6	16	6	Huacho	Iquitos	General	558	3,651	2,787
Manavi	31	15	15	1	6	41		14	45				British	Pacific Steam Navigation Co.	216	0	35	1	10	6	Guayaquil	Cristobal	General	1,357	884	
Andrea F.	31	11	00	1	7	38		15	17		15	17	American	Lockenbach Line	496	0	68	0	18	0	San Francisco	Boston	General	2,900	11,487	8,732
Huasco	1	1	10	1	8	48		16	00				Chile	Chilean Line	355	0	44	0	20	0	Talcahuano	Cristobal	General	4,552	3,182	
Sonora	1	6	40	1	9	40	1	18	10				French	French Line	388	5	54	2	24	6	Vancouver	Bordeaux	General	6,515	6,394	4,515

* Mine planter.

* Wool, canned fruits, dried fruits, lumber, and general.

* Coffee, sugar, and hides.

* Wool, gum, and skins.

* Canned fruits, barley, and wheat.

* 2,000,000 feet lumber.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

(Continued on page 446, column 2.)

Notice to Mariners.—San Jose Island Light.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., March 30, 1922.

The San Jose Island Light, reported out of service in my circular of March 22, 1922, was again put in service March 28, with its former characteristics.

JAY J. MORROW,
Governor.

The "Garfield" Dry-docked.

The steamer *Garfield* of the Grace Line, which was towed into Cristobal in the morning of March 20 by the Panama Canal salvage steamer *Favorite* from Galera de Zamba Bay, Colombia, where she had been aground nearly 2 months, went into dry dock at Cristobal on March 26. She was docked without the discharge of her cargo.

Repairing of "Arizonan" Shows Advantage of New Provision Relative to Tolls.

The steamship *Arizonan* of the American-Hawaiian Line, which passed through the Canal on March 14, carrying 12,000 tons of general cargo from Vancouver and west coast ports of the United States for London, Liverpool, Belfast, and Glasgow, put back from the Caribbean, after losing 1 propeller blade and cracking another, and has been repaired at Balboa. In addition to renewing the blades of the propeller, the forces of the Mechanical Division raised the rudder and rewooded the stern tube bearings.

The job is principally of interest on account of its affording a striking application of the rule established under the Executive Order of November 17, 1921, that vessels transiting the Canal for the sole purpose of receiving repairs at Balboa shops are exempted from the payment of tolls. Tolls on the *Arizonan*, a vessel of 6,970 net tons, Panama Canal measurement, and 6,514 net tons, United States measurement, amount to \$8,142.50 when she is laden. For transiting for the sake of repairs, however, the charges for transit were at the rate of \$5 per foot of draft, amounting to \$155, for 31 feet. There were additional charges for towage, made necessary by the ship's condition.

After returning through the Canal the *Arizonan* discharged about 7,000 tons of her cargo at Pier 18, Balboa, and went into dry dock with the rest. She entered the dry dock in the afternoon of March 26, and left it in the morning of March 28.

Chilean Fruit.

A little more than a year ago 2 experimental shipments of fruit were dispatched from Chile to New York, in the expectation that an important trade might be developed, based primarily on the opposition of the seasons north and south of the equator, which enables Chile to ship freshly picked fruits in midwinter and early spring. The first consignment is reported to have met with gratifying success, but the second resulted in failure, due apparently to careless packing.

Since then the Chilean government has carefully investigated the possibilities and the requirements of the New York market, and fresh attempts have been made under government patronage and encouragement to develop the trade. The steamship *Essequibo* of the Pacific Steam Navigation Company, which passed through the Canal on February 19, carried Chilean fruit valued in Chile at 100,000

pesos and estimated to be worth a like amount in dollars landed in New York. This included grapes, peaches, cherries, plums, etc., all carefully packed and inspected by a government expert before shipment.

The results, as nearly as can be ascertained on the Isthmus at this time, were entirely satisfactory.

The full development of this trade may have to await the assignment of specially constructed steamers. Those now available were not designed to carry fruit, and are not as well adapted to that service as they might be. In any case the trade will be seasonal and confined to the late winter and early spring; but it may nevertheless assume important proportions.

Surplus Material For Sale.

Due to decreased demands, large quantities of material of many classes now in stock in the Panama Canal Zone, purchased for Canal maintenance and for repairs and issues to vessels, has been declared surplus and is being offered for sale to the public.

Endeavor will first be made to effect sale of certain classes of material which can be satisfactorily sold from description without physical inspection by bidders prior to shipment from the Isthmus, on a basis of delivery f. o. b. dock New York Harbor or f. a. s. vessel at the Isthmus, as desired by bidders.

It is desired, if practicable, to sell this material for shipment to markets such as will make its present location an advantage as compared with material which might be shipped from the United States, such markets, for example, as South and Central American countries, Japan, China, Spain, etc.

Parties interested should apply for full information and description of the different classes of material available by communicating with the General Purchasing Officer, The Panama Canal, Washington, D. C., or the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, advising, in so far as possible, the particular kinds of material in the purchase of which they would be interested.

Among the materials available in important quantities are items such as bearing metals, sheet metals, bronze mosquito screening, horse and mule shoes, air-brake material, scales, chain, tackle blocks, sheet glass, paints and varnishes, lubricating oils and grease, fire bricks, vitrified pipe and fittings, millwork, canvas, rope, hose, nails, marine hardware, general hardware, bolts, nuts, and rivets, cable, electrical material, building materials, tools, iron and steel bars, plates and shapes, and repair parts for various kinds of equipment.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending April 1, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
La Brea.....	Union Oil Co.....	March 26.....	March 26.....	1,444	.....
Newport.....	Pacific Mail Steamship Co.....	March 26.....	March 26.....	36	.....
Quincy.....	United States Navy.....	March 29.....	March 30.....	70	.....
Jamaica.....	Pacific Steam Navigation Co.....	March 30.....	March 31.....	1	.....
Newport.....	Pacific Mail Steamship Co.....	March 31.....	March 31.....	.....	10
Alvarado.....	Pacific Steam Navigation Co.....	March 29.....	March 29.....	.....	20
Manavi.....	Pacific Steam Navigation Co.....	March 31.....	April 1.....	2	.....

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Cristobal for Week Ending April 1, 1922.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo	
				Discharged	Laded.
				Tons.	Tons.
Almagro.....	Pacific Steam Navigation Co.....	March 26.....	March 26.....		217
Atenas.....	United Fruit Co.....	March 26.....	March 27.....	2	105
Anna.....	Caribbean Steamship Line.....	March 26.....	March 27.....	100	(*)
Asian.....	Leyland Line.....	March 26.....	March 28.....		400
Alvarado.....	Pacific Steam Navigation Co.....	March 26.....	March 29.....		388
Newport.....	Pacific Mail Steamship Co.....	March 26.....	March 31.....	2,128	1,380
Ebro.....	Pacific Steam Navigation Co.....	March 27.....	March 27.....	5	(*)
Eupatoria.....	Hamburg-American Line.....	March 27.....	March 28.....	1½	(*)
Heredia.....	United Fruit Co.....	March 27.....	March 29.....	691	84
La Navarre.....	French Line.....	March 27.....	March 30.....	103	698
Indiana.....	French Line.....	March 27.....	March 28.....	23	(*)
Panama.....	Panama Railroad Steamship Line.....	March 28.....		1,904	
Savoia.....	Italian Steamship Line.....	March 28.....		160	
Saint Louis.....	French Line.....	March 28.....	March 29.....	27	72
Cauca.....	Pacific Steam Navigation Co.....	March 28.....	March 31.....	1,385	637
San Gil.....	United Fruit Co.....	March 29.....	March 30.....	89	146
Advance.....	Panama Railroad Steamship Line.....	March 29.....		140	
Atenas.....	United Fruit Co.....	March 30.....	March 30.....	4	1
Kinderdijk.....	Holland-American Steamship Line.....	March 30.....	March 31.....	37	97
Trophon.....	Anglo-Saxon Petroleum Co.....	March 30.....	April 1.....	5,400	(*)
Losada.....	Pacific Steam Navigation Co.....	March 31.....	April 1.....	113½	42
Jamaica.....	Pacific Steam Navigation Co.....	March 31.....		71	
Tolosa.....	United Fruit Co.....	March 31.....	April 1.....	374	90
Bayano.....	Elders & Fyffes, Ltd.....	April 1.....	April 1.....	35	24
Manavi.....	Pacific Steam Navigation Co.....	April 1.....		70	
Huasco.....	Chilean Line.....	April 1.....		50	
Sonora.....	French Line.....	April 1.....		48	

* No cargo laded.

* Packages.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended March 28:

Steamships *San Joaquin*, remove, reverse, and reassemble cathead on anchor windlass; *Alloway*, manufacture piston, piston rod, 2 rings, and drill studs out of cylinder.

PREVIOUSLY REPORTED.

Barge *No. 13*, dock and undock; clean bottom and paint; install 8 new shell plates.

The following vessels were at the Cristobal shops for repairs during the two weeks ended April 3:

Steamships *Garfield*, open up boilers; scale and clean; remove and clear sea inlet and discharge pipes; open up, clear, and repair main refrigerator and auxiliary condensers; test and repair fuel oil and feed heaters; test all tanks; repair bottom as directed; overhaul and adjust steering engine, windlass, and capstan; open up, clear, and repair fresh water pump, main circulating pump, ballast and sanitary pumps; repair jacking engine; overhaul all bilge piping, etc.; *Killerig*, dock, clean, and paint; repair bulkheads; make 4 ash buckets; renew zincs; open up and examine sea valves and strainers, etc.; *Nemesis*, dock, clean, and paint; install new tail shaft; rewood stern tube; repair rudder; overhaul leads to steering gear; weld hawse pipe; renew and weld rivets in bow as directed; renew zincs; open up, examine and repair sea valves and strainers, etc.; *Gen. G. W. Goethals*, repair H. P. cylinder and cover; calk passenger deck; *Panama*, manufacture new worm and pinion for main engine turning gear; manufacture and install tripper on port anchor; clear main feed heater coils; repair sanitary line in No. 3 hold; *Advance*, overhaul forward dynamo; repair ceiling in coal bunkers; repair bilge suction line; install mooring chock, aft; repair motor boat; repair anchor windlass, etc.; *Birmingham City*, repair steering engine, etc.; *Jamaica*, supply and fit 4 steel patches and 2 angle stiffeners on after bulkhead of bunker; repair sanitary pump; renew floor and guard plates in stokehold; repair ventilators; clear and repair miscellaneous piping, etc.; *Cauca*, repair crank shaft of ice machine; repair auxiliary sanitary pump; repair

port lifeboat, renew ballast pump discharge pipe, etc.; motor ship *Laura C. Hall*, repair pump; install 2 catheads; *Manavi*, renew ventilator grating; manufacture 2 guy wires; repair block, etc.; motor boat *Bolivar*, install struts; line up engines and repair cylinders; clean and paint hull, etc.; Colombian cutter *No. 2*, overhaul engines; repair bulwarks and ports; clean and paint hull, etc.; steamships *Ceres*, *Eiger*, *La Navarre*, *Eldorado*, *Indiana*, *Heredia*, U. S. S. *O-13*, U. S. steamer *Douglas*, and launches *Cruces*, *Patrol*, and *Hibiscus*, minor repairs.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT,
BALBOA HEIGHTS, C. Z., April 3, 1922.

On April 2, 1922, Master Judson, steamship *Delco*, reports sighting a log 30 feet long, 3 feet in diameter, Lat. 8° 57' N., Long. 83° 20' W. Dangerous to navigation.

J. J. MORROW,
Governor.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
James Campbell.....	22374	Jamaica.....	La Boca.....	Coaling Station.....	March 19, 1922.
James McDonald.....	33748	St. Lucia.....	Paraiso.....	Dredging Division....	March 27, 1922.
Chester E. Nevius.....	787	United States....	Ancon.....	Executive Department..	March 22, 1922.
James Nancis.....	38652	Barbados.....	Colon.....	Supply Department....	March 28, 1922.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective April 1, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.25
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Fbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.50
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.56
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.15
Paint, zinc, white, in oil.....	Lb.	.16
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.175
Waste, cotton, white.....	Lb.	.20

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APR 24 1922

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., April 12, 1922.

No. 35.

The "Tavernilla" Sent to Assist the "Willpolo."

In response to a request of the operators of the steamship *Willpolo*, which reported herself in distress off the coast of Nicaragua, near Corinto, The Panama Canal tug *Tavernilla* left Balboa in the night of April 10 to tow the vessel to San Pedro. The tug *Sea Lion* was also sent out by the owners, from San Francisco to assist.

The "Gorgona" Sent to Tow in the "W. J. Hanna."

The tug *Gorgona* left Balboa on April 8 to bring in the Standard Oil tanker *W. J. Hanna*, which was in distress off the coast of Peru, with a broken crankshaft. Repairs will be made at Balboa shops.

Increased Services of French Line.

The services of the Compagnie Generale Transatlantique between ports of France, Belgium, Holland, and Germany and the west coasts of South and North America have been expanded considerably. The South American service was begun in January, 1920, and the North American service in December, 1921. The agent of the company at Cristobal reports that 8 steamers are engaged now in the South American service and 11 in the North American service. The 8 plying to South America are the *St. Jean*, *Indiana*, *Hudson*, *Virginia*, *Georgia*, *Texas*, *Maryland*, and *Ontario*. Those reported in the North American service are the *Honduras*, *Mississippi*, *St. Joseph*, *Montana*, *St. Louis*, *Sonora*, *St. Andre*, *Alaska*, *Alabama*, *Arizona*, and *Iowa*.

Vessel Launched for Chilean Line's Projected New York and European Service.

Advice has been received from the agent on the Isthmus for the South American Steamship Company (the Cia. Sud Americana de Vapores, the Chilean Line) of the launching at Greenock, Scotland, of the turbine twin-screw steamer *Anconcagua*, to be used with another vessel of the same type, now building, in a mail, passenger, and cargo service from Valparaiso to New York and Europe and return.

The *Anconcagua* is 438 feet in length, over all, 56 feet in moulded breadth, and 33 feet in depth moulded to bulkhead deck. She is of approximately 7,000 tons gross, and her turbines are to develop 8,500 shaft horsepower and drive the ship at a speed of 17 knots. On account of the varied climatic conditions under which the vessel is to be operated, special consideration has been given to the heating and ventilating arrangements.

The new *Anconcagua* is to replace a veteran ship of the same name now in the service of the company. They are named for Mount Anconcagua, the highest mountain in Chile.

No prophecy can be made by the local agency as to the time at which the new service will be begun.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, April 8, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.				Entered Canal.				Completed transit.				Cleared for sea.				Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Willpelo	1	23	19	2	6	45	2	14	55	2	16	20	2	16	20	2	American	Williams Steamship Co.	386.8	52.2	24.0	New York	Los Angeles	General	5,874	5,680	4,112
Cocotte	2	6	35	2	7	48	2	16	06	2	17	09	2	17	09	2	American	Grace Line	394.2	52.3	18.0	Newport News	Iquique.	Coal	2,040	6,652	4,913
Scout	1	20	05	2	8	45	2	17	08	2	18	08	2	18	08	2	British	Raeburn Vernel	420.0	54.0	26.8	San Cruz	Formosa.	Sugar	7,620	6,321	4,548
Radnor	2	9	45	2	10	13	2	18	25	2	18	25	2	18	25	2	American	Barber Line (S. B.)	434.0	57.7	28.6	New York	Hongkong.	General	10,114	7,993	5,871
Celestial	2	6	30	2	12	30	2	20	25	2	21	39	2	21	39	2	American	Dollar Line	420.0	55.2	27.10	New York	Los Angeles.	General	8,758	7,579	5,527
Huntingdon	3	3	47	3	7	06	3	15	37	4	8	06	4	8	06	4	British	Federal Steam Navigation Co.	520.0	64.0	21.6	London.	Wellington.	General	4,750	12,209	8,441
Amphise	3	11	35	3	11	45	3	21	30	4	14	00	4	14	00	4	American	Alaska Packers Assn. (S. B.)	276.0	40.0	21.6	Norfolk.	San Francisco	Coal	3,500	2,200	2,058
Mauro C. Hall	3	20	15	4	6	23	4	14	30	4	7	51	4	7	51	4	British	Pacific Metals Corporation.	81.0	26.0	9.0	Cristobal	Buenaventura.	General	32	132	72
Manavi	1	14	45	4	11	00	4	17	27	4	22	09	4	22	09	4	British	Pacific Steam Navigation Co.	216.0	35.1	11.7	Plymouth.	Guayaquil.	General	152	1,357	884
Bugamaule	4	11	35	4	12	15	4	18	50	4	23	38	4	23	38	4	Chilean	Compania Schwager.	290.0	44.0	19.0	Cristobal	Valparaiso.	General and coal	2,700	2,630	1,517
C. E. No. 1																	American	C. A. Blair	12.0	24.0		Cristobal	Gatun Lake.	Ballast		7	7
C. E. No. 2																	American	C. A. Blair	12.0	24.0		Cristobal	Gatun Lake.	Ballast		7	7
West Catalace.	4	19	25	5	6	30	5	14	07	5	15	14	5	15	14	5	American	Elder Steel Steamship Co.	410.5	54.3	23.0	Philadelphia.	Seattle.	General	5,995	6,567	4,917
K. I. Luckenbach	5	1	08	5	7	22	5	15	28	5	16	27	5	16	27	5	American	Luckenbach Line	470.0	56.0	25.0	New York	San Francisco	General	7,000	8,552	6,236
Santa Paula	5	5	43	5	8	17	5	16	25	5	16	25	5	16	25	5	American	Grace Line	404.0	54.0	16.0	Charleston.	West coast.	Ballast	6,744	4,825	
Nakalla	5	7	38	5	9	10	5	17	21	5	17	21	5	17	21	5	British	T. and J. Brookbank	445.0	58.0	23.0	London.	Auckland.	General	7,000	7,445	4,910
Wolsum	2	16	00	5	12	20	5	19	47	5	19	47	5	19	47	5	Dutch.	Vinke & Co.	369.0	48.0	20.0	Cristobal	Balboa.	General	4,500	4,742	3,524
Huasco	1	16	00	6	6	20	6	13	09	6	14	12	6	14	12	6	Chilean	Chilean Steamship Line	379.7	40.0	23.0	Cristobal	Valparaiso.	General	520	4,552	3,182
Knoxville City	5	9	41	6	7	23	6	14	40	6	15	30	6	15	30	6	American	United States Steel Products Co.	434.0	56.0	26.0	Baltimore.	Los Angeles.	General	8,356	7,539	5,448
Crosshill	5	15	01	6	8	45	6	16	42	6	24	00	6	24	00	6	Danish	MacBeth & Co.	385.3	52.0	23.2	Hamburg.	Hongkong.	Sugar	5,250	5,140	3,510
Panama	5	11	19	6	9	35	6	16	42	6	18	38	6	18	38	6	Japanese	East Asiatic Steamship Co.	410.0	51.0	24.10	Buenos Aires.	Tacahuanio.	General	4,696	7,027	5,341
Mexico Maru.	5	16	19	6	9	35	6	16	42	6	18	38	6	18	38	6	Japanese	Ozaka Shosen Kaisha.	400.0	51.0	24.10	Buenos Aires.	Tacahuanio.	General	4,758	6,067	4,230
Steel Inventor.	5	23	31	6	10	30	6	19	00	6	20	04	6	20	04	6	American	United States Steel Products Co.	424.0	56.0	26.0	New Orleans.	Yokohama.	General	7,810	7,530	5,448
West Himrod.	2	19	40	6	12	07	6	19	53	6	19	53	6	19	53	6	American	Barber Line (S. B.)	410.0	54.4	23.9	New York	Vancouver.	Sugar	6,254	6,470	4,677
Sherman	6	19	20	7	13	05	7	15	00	7	15	00	7	15	00	7	American	Sherman Steamship Co.	400.3	54.0	23.0	New York	Valparaiso.	General and coke	3,327	5,037	3,492
Capella	2	7	00	7	8	45	7	17	05	7	20	55	7	20	55	7	American	United States Navy	390.0	45.3	22.11	New York	Vancouver.	Naval stores	5,257		
Miss Cristobal	7	16	08	8	6	21	8	14	13	8	15	40	8	15	40	8	American	L. W. Parsons	24.4	7.0	2.0	Bellast.	Balboa.	Ballast	2		
Gymric	7	16	08	8	6	21	8	14	13	8	15	40	8	15	40	8	British	Bank Line, Ltd.	420.3	54.6	18.2	Cristobal	San Francisco	Ballast	6,501	4,559	
Volumina	8	6	30	8	7	17	8	15	22	8	16	28	8	16	28	8	British	Gow Harrison & Co.	423.0	56.0	26.0	New York	Shanghai.	Sugar and steel	7,300	6,228	4,524
Colombia.	6	15	37	8	9	00	8	16	28	8	16	28	8	16	28	8	American	Pacific Mail Steamship Co.	380.0	48.7	24.8	Baltimore.	San Francisco	General	2,404	6,015	4,281
Yang Tze	8	6	45	8	10	50	8	18	20	9	19	30	9	19	30	9	British	Alfred Holt & Co.	450.0	53.0	26.6	New York	Yokohama.	Iron, machinery	6,536	7,042	5,021

* Sailing ship.

* Motor schooner.

* Barge.

* Motor ship.

* Launch.

Idorado.	1	23	00	2	8	12	2	16	22	4	19	10	American.	Western Transport Co.	245	6	42	0	18	0	San Francisco	New Orleans	General	2,600	2,430	1,662	
Idorado.	2	6	30	2	8	44	2	16	50	5	12	20	Dutch.	Vinck & Co.	360	0	48	0	19	0	Greys Harbor	Cape Town	Lumber	4,174	4,742	3,524	
Idorado.	3	22	12	2	10	37	2	19	30	2	21	20	American.	American-Hawaiian Line	484	0	57	0	30	9	Balboa	London	General	12,000	9,158	6,970	
Idorado.	4	1	30	2	11	04	2	19	55	9	9	10	British.	Pacific Steam Navigation Co.	215	0	33	5	17	6	Champerico	Cristobal	General	1,273	706		
Idorado.	5	3	00	2	13	00	2	20	15	4	6	23	British.	Pacific Metal Transportation Co.	81	0	26	0	10	0	Buenaventura	Cristobal	General	6,274	5,329	3,812	
Idorado.	6	6	45	3	8	35	3	16	45	3	22	45	British.	Thos. Law & Co.	379	6	50	5	24	0	Portland	Queenstown	Grain, wheat.	1,600	6,033	4,353	
Idorado.	7	2	00	3	9	47	3	17	10	4	20	00	American.	Pacific Mail Steamship Co.	380	0	48	6	21	6	San Francisco	New York	General	4,700	5,174	3,877	
Idorado.	8	4	10	30	4	10	53	4	18	23	4	19	15	American.	Delco Steamship Co.	328	0	52	0	23	0	Manila	New York	General	2,828	3,795	2,660
Idorado.	9	15	30	5	6	39	5	14	50	5	23	30	American.	United States Steel Products Co.	424	2	56	2	24	6	Vancouver	London	Lumber	8,200	7,611	5,490	
Idorado.	10	16	00	5	7	58	5	15	45	5	23	30	Peruvian.	United States Steel Products Co.	374	7	46	3	19	0	Seattle	London	General	4,466	2,405		
Idorado.	11	16	00	5	8	03	5	15	40	5	16	35	British.	Peruvian Line	215	0	33	5	17	0	Callao	Cristobal	General	1,213	692		
Idorado.	12	31	16	5	8	52	5	16	35	5	16	35	American.	Pacific Steam Navigation Co.	401	7	53	7	24	0	Acajutla	Cristobal	General	5,500	7,091	5,002	
Idorado.	13	6	10	6	9	47	5	18	25	6	15	52	American.	American-Hawaiian Line	491	5	58	2	27	2	Seattle	New York	General	8,900	10,491	7,546	
Idorado.	14	6	10	6	7	45	6	15	52	6	15	52	American.	American-Hawaiian Line	491	5	58	2	27	2	Seattle	New York	General	8,900	10,491	7,546	
Idorado.	15	7	5	00	7	8	00	7	16	03	8	12	45	Dutch.	United States Shipping Board	410	0	56	0	24	6	Portland	Baltimore	General	5,500	8,199	6,250
Idorado.	16	7	5	00	7	8	00	7	16	03	8	12	45	Dutch.	Holland-American Line	470	0	58	0	29	0	Portland	Baltimore	General	5,500	8,199	6,250
Idorado.	17	7	10	8	7	10	8	14	00	7	21	40	American.	Holland-American Line	470	0	58	0	29	0	Portland	Baltimore	General	5,500	8,199	6,250	
Idorado.	18	7	10	8	7	10	8	14	00	7	21	40	American.	United States Shipping Board.	384	8	51	2	17	6	Adelaide	New York	General	1,900	5,904	4,321	
Idorado.	19	7	2	00	8	7	10	8	14	00	8	14	00	American.	United States Army	448	0	58	0	20	0	San Francisco	New York	General	1,900	5,904	4,321
Idorado.	20	7	2	00	8	7	22	8	15	45	8	17	20	American.	United States Navy	149	0	30	0			Sea	New York	Army supplies.	108		
Idorado.	21	7	22	8	7	22	8	15	45	8	17	20	American.	United States Navy	149	0	30	0			Sea	New York	Army supplies.	108			
Idorado.	22	7	53	8	7	53	8	17	20	8	17	20	British.	United States Navy	401	0	52	0	25	3	Talcahuano	Liverpool	General	5,874	6,440	4,900	
Idorado.	23	7	53	8	7	53	8	17	20	8	17	20	British.	Pacific Steam Navigation Co.	401	0	52	0	25	3	Talcahuano	Liverpool	General	5,874	6,440	4,900	
Idorado.	24	8	00	8	7	09	8	18	05	8	18	05	Chilean.	Chilean Line	412	0	50	0	24	0	Valparaiso	Liverpool	General	1,720	6,050	3,442	
Idorado.	25	8	00	8	7	09	8	18	05	8	18	05	Chilean.	Chilean Line	412	0	50	0	24	0	Valparaiso	Liverpool	General	1,720	6,050	3,442	
Idorado.	26	8	10	8	10	30	8	18	07	8	18	07	British.	Imperial Oil Co.	250	0	44	0	17	0	San Francisco	Halfax	Ballast	2,631	1,718		
Idorado.	27	1	40	8	10	30	8	18	07	8	18	07	British.	Imperial Oil Co.	250	0	44	0	17	0	San Francisco	Halfax	Ballast	2,631	1,718		

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
April 2	Abangarez	United Fruit Co.	New Orleans via Habana.	April 3	Abangarez	United Fruit Co.	Bocas del Toro.
April 2	Crijsen	Royal Netherlands W. I. Mail	Amsterdam via wayports.	April 4	Hambal	United States Navy	Mosquito Cays.
April 3	Parissina	United Fruit Co.	New Orleans.	April 4	Crijsen	Royal Netherlands W. I. Mail	Port Limon.
April 3	Trives	United Fruit Co.	New York via Colombia.	April 5	Advance	Panama Railroad Steamship Line.	Puerto Colombia.
April 3	Metapan	United Fruit Co.	New York via Kingdon.	April 5	Parissina	United Fruit Co.	New Orleans via Bocas del Toro and Habana.
April 3	Amassia	Hamburg-American Line.	Hamburg via wayports.	April 6	Abangarez	United Fruit Co.	New Orleans.
April 6	Abangarez	United Fruit Co.	Bocas del Toro.	April 6	Trives	United Fruit Co.	New York via Kingdon.
April 6	Calamarez	United Fruit Co.	New York via wayports.	April 6	Metapan	United Fruit Co.	New York via Colombia and Jamaica.
April 7	Arabia	Panama Plantation Syndicate	Colon.	April 6	Amassia	Holland-American Line.	Port Jamaica.
April 7	Crijsen	Panama Petroleum W. I. Mail.	Tampico.	April 6	Savioia	Italian Line	Cartagena.
April 7	Norman Bridge	Royal Netherlands W. I. Mail.	Port Limon.	April 6	Panama	Panama Railroad Steamship Line.	New York via Haiti.
April 7	San Benito	United Fruit Co.	Port Limon.	April 7	San Benito	United Fruit Co.	Boston.
April 8				April 8	Calamarez	United Fruit Co.	New York via wayports.
April 8				April 8	Crijsen	Royal Netherlands W. I. Mail.	Puerto Colombia.
April 8				April 8	Norman Bridge	Pan-American Petroleum Co.	Tampico.

PORT OF BALBOA.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
April 4	Onaka	Tank Storage and Carriage Co.	Sea.	April 4	Almirante Latorre	Chilean Government	Valparaiso, Chile.
April 4	Derblay	United States Shipping Board	Seattle.	April 6	Oreka	Tank Storage and Carriage Co.	Shanghai, China.
April 5	Birmingham	United States Navy	Sea.	April 6	Derblay	United States Shipping Board	Valparaiso, Chile.
April 7	Guardian	All-American Cables Co.	Iquique.				

* Dreadnaught.

* Other than ships passing through the Canal.

7 United States cruiser.

Commercial Traffic Through the Panama Canal in March, 1922, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of United States to Far East:</i>							<i>Long tons.</i>
British.....	9	39,200	47,768	55,583	35,577	\$48,536.75	71,442
Japanese.....	10	41,164	44,872	58,645	39,394	50,688.70	67,692
United States.....	5	23,258	27,073	32,093	20,720	29,072.50	37,901
Norwegian.....	2	7,773	8,807	11,425	7,038	9,560.95	15,214
Totals.....	26	111,395	128,520	157,746	102,729	137,958.90	192,249
<i>United States coastwise:</i>							
United States.....	34	129,834	162,572	200,614	129,288	161,738.65	141,648
<i>From east coast of United States to west coast of South America:</i>							
United States.....	7	19,423	25,217	32,495	19,638	21,676.05	12,959
British.....	4	11,154	13,991	18,959	11,531	13,942.50	10,695
Norwegian.....	2	1,854	2,658	3,124	1,848	2,317.50	96
Swedish.....	1	1,440	1,399	2,257	1,583	1,678.80	2,129
Totals.....	14	33,871	43,265	56,835	34,600	39,614.85	25,879
<i>From Europe to Australasia:</i>							
British.....	9	40,585	54,848	62,162	39,047	49,963.12	35,505
<i>From Europe to west coast of South America:</i>							
British.....	3	13,013	16,449	20,990	13,129	16,266.25	7,046
German.....	3	7,901	10,830	11,785	6,913	9,876.25	7,243
Italian.....	1	3,353	4,310	5,868	3,579	4,191.25	1,400
French.....	1	4,089	4,936	5,617	3,491	5,111.25	812
Dutch.....	1	1,605	3,123	2,672	1,629	2,006.25	1,044
Totals.....	9	29,961	39,648	46,932	28,741	37,451.25	17,545
<i>From Cristobal, C. Z., to west coast of South America:</i>							
British.....	3	1,469	1,974	2,600	1,605	1,836.25	1,236
Chilean.....	2	3,072	5,224	6,543	3,921	3,840.00	1,436
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	769
Totals.....	7	7,260	12,543	18,163	10,043	9,075.00	3,441
<i>From Europe to west coast of United States:</i>							
British.....	2	6,187	7,695	9,727	6,162	6,562.69	850
French.....	1	3,631	4,166	5,818	3,712	4,538.75	6,200
Norwegian.....	1	4,523	5,627	7,093	4,479	5,653.75	8,180
Swedish.....	1	2,622	4,035	4,315	3,329	3,277.50	5,587
United States.....	1	4,062	5,058	6,502	4,015	5,077.50	1,918
Totals.....	6	21,025	26,581	33,455	21,697	25,110.19	22,735
<i>From Cristobal, C.Z., to west coast of Central America:</i>							
British.....	4	2,799	3,108	4,874	2,844	3,184.49	1,393
United States.....	1	1,622	1,982	2,671	1,664	2,027.50	88
Totals.....	5	4,421	5,090	7,545	4,508	5,211.99	1,481
<i>From east coast of United States to Australasia:</i>							
British.....	4	17,563	23,698	27,975	17,632	21,953.75	23,080
United States.....	1	4,530	4,561	5,840	4,497	5,473.20	6,700
Totals.....	5	22,093	28,259	33,815	22,129	27,426.95	29,780
<i>From Europe to west coast of Canada:</i>							
British.....	1	5,761	7,595	9,409	5,812	7,205.00	9,346
Dutch.....	1	4,860	6,068	7,651	4,796	6,075.00	6,900
French.....	1	4,368	4,369	5,248	3,329	5,242.80	5,446
Totals.....	3	11,992	18,032	22,308	13,937	18,522.80	21,692
<i>From West Indies to Far East:</i>							
British.....	3	10,555	11,966	13,958	8,957	13,023.45	19,159
<i>From east coast of Mexico to west coast of South America:</i>							
British.....	1	4,045	5,311	7,270	4,513	5,806.25	9,600
United States.....	1	4,158	4,705	6,666	4,157	5,197.50	9,500
Totals.....	2	8,803	10,076	13,936	8,670	11,003.75	19,100
<i>From east coast of United States to west coast of Canada:</i>							
United States.....	2	6,249	7,660	9,580	6,272	7,062.30	12,200

ATLANTIC TO PACIFIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From West Indies to west coast of Canada:</i>							<i>Long tons.</i>
Norwegian.....	1	2,444	3,042	3,856	2,418	\$3,055.00	4,806
United States.....	1	3,480	4,956	5,597	3,485	4,350.00	6,761
Totals.....	2	5,924	7,998	9,453	5,903	7,405.00	11,567
<i>From Europe to Far East:</i>							
British.....	1	785	891	1,322	796	981.25	20
Norwegian.....	1	2,567	3,269	3,785	2,307	3,208.75	4,833
Totals.....	2	3,352	4,160	5,107	3,103	4,190.00	4,853
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	2	2,986	3,756	4,796	2,963	3,732.50	2,021
<i>From east coast of Mexico to Far East:</i>							
Norwegian.....	1	4,407	5,051	7,022	4,438	5,508.75	8,682
<i>From east coast of United States to Balboa, C. Z.:</i>							
United States.....	1	4,464	5,327	7,073	4,360	5,580.00	8,000
<i>From east coast of United States to Gatun Lake, C. Z.:</i>							
United States.....	1	3,618	3,686	4,075	3,760	2,713.50	
<i>Foreign vessels between United States coastwise ports:</i>							
Norwegian.....	1	2,338	2,924	3,586	2,345	2,922.50	
<i>From Mexican coastwise ports:</i>							
French.....	1	2,155	2,096	2,953	1,880	2,515.20	3,800
<i>From Europe to west coast of Central America:</i>							
German.....	1	1,118	1,361	2,064	1,182	1,397.50	336
<i>Colombian coastwise ports:</i>							
British.....	1	614	622	1,138	602	746.40	279
Totals, March, 1922....	138	472,020	586,041	724,316	461,154	580,374.55	581,952
Totals, February, 1922..	114	394,817	488,005	605,323	384,957	482,933.41	442,825
Totals, March, 1921....	140	514,468	613,591	784,748	506,842	635,165.10	636,579

PACIFIC TO ATLANTIC.

<i>United States coastwise:</i>							<i>Long tons.</i>
United States.....	25	102,916	128,988	161,335	103,509	\$124,465.78	123,657
<i>From west coast of South America to east coast of United States:</i>							
United States.....	5	12,548	15,014	19,394	12,254	15,685.00	16,773
British.....	3	7,414	9,512	13,224	7,927	9,267.50	8,150
Norwegian.....	2	1,745	2,456	2,868	1,765	2,181.25	1,525
Swedish.....	1	1,338	1,431	2,242	1,595	1,672.50	2,650
Totals.....	11	23,045	28,413	37,728	23,541	28,806.25	29,098
<i>From west coast of South America to Europe:</i>							
British.....	5	14,227	17,975	24,911	14,440	17,783.75	18,918
Dutch.....	3	6,576	10,099	10,340	6,601	8,220.00	10,229
Danish.....	1	4,223	5,338	6,650	4,247	5,278.75	7,511
French.....	1	4,288	4,409	5,564	3,524	5,290.80	4,749
German.....	1	2,957	3,486	4,750	2,969	3,696.25	4,591
Totals.....	11	32,271	41,307	52,215	31,781	40,269.55	45,998
<i>From west coast of South America to Cristobal, C. Z.:</i>							
British.....	3	1,262	1,648	2,280	1,365	1,577.50	492
Chilean.....	2	3,072	5,224	6,543	3,921	3,840.00	257
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	2,999
United States.....	1	334	335	615	373	402.00	65
Totals.....	8	7,387	12,552	18,458	10,176	9,218.25	3,813
<i>From Australasia to Europe:</i>							
British.....	8	36,998	44,483	58,263	37,243	46,247.50	45,210
<i>From west coast of United States to Europe:</i>							
United States.....	4	15,696	19,624	25,256	15,644	19,620.00	33,828
British.....	2	6,749	8,782	10,731	6,803	8,425.00	13,981
Danish.....	1	4,665	4,665	4,714	3,004	5,831.25	6,459
Totals.....	7	27,101	33,071	40,701	25,451	33,876.25	54,268

PACIFIC TO ATLANTIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From west coast of Canada to east coast of United States:</i>							<i>Long tons.</i>
United States.....	3	12,591	16,235	19,484	12,692	\$15,738.75	17,182
British.....	1	4,200	4,623	6,656	2,130	5,250.00	4,800
Totals.....	4	16,791	20,858	26,140	14,822	20,988.75	21,982
<i>From west coast of Canada to Europe:</i>							
United States.....	2	10,230	11,656	14,566	10,212	12,787.50	19,304
French.....	1	3,638	4,170	5,796	3,689	4,547.50	5,252
Totals.....	3	13,868	15,826	20,362	13,901	17,335.00	24,556
<i>From Far East to east coast of United States:</i>							
Japanese.....	2	7,912	10,250	12,808	7,874	9,890.00	14,120
United States.....	1	3,816	4,758	6,517	4,046	4,770.00	4,793
Totals.....	3	11,728	15,008	19,325	11,920	14,660.00	18,913
<i>From west coast of Central America to Cristobal, C. Z.:</i>							
British.....	3	2,145	2,416	3,746	2,194	2,681.25	3,543
<i>From west coast of South America to east coast of Mexico:</i>							
British.....	2	8,565	9,694	13,506	8,464	6,979.68	.....
Norwegian.....	2	8,825	10,094	14,009	8,860	7,267.68	.....
Totals.....	4	17,390	19,788	27,515	17,324	14,247.36	.....
<i>From west coast of United States to east coast of Mexico:</i>							
United States.....	2	8,486	9,854	13,724	8,484	7,094.88	.....
<i>From Colombian coastwise ports:</i>							
British.....	2	1,228	1,244	2,276	1,204	1,492.80	186
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	2	2,986	3,756	4,796	2,963	3,732.50	3,967
<i>From Balboa, C. Z., to east coast of Mexico:</i>							
United States.....	1	4,464	5,327	7,073	4,360	3,835.44	.....
<i>From Australasia to east coast of Canada:</i>							
British.....	1	3,245	4,092	5,399	2,333	4,056.25	2,388
<i>Miscellaneous (Huacho, Peru, to Iquitos, Peru, on Amazon River):</i>							
Peruvian.....	1	2,690	2,787	3,599	2,674	3,344.40	558
Totals, March, 1922....	96	314,739	389,770	502,655	314,880	376,352.21	378,137
Totals, February, 1922..	98	315,731	398,530	499,713	315,169	383,332.77	359,249
Totals, March, 1921....	115	409,841	499,227	632,672	410,599	470,371.45	447,984

Price of Coal at San Francisco.

Advice has been received from the King Coal Company, San Francisco, Cal., that it is quoting a price on bunker coal at San Francisco of \$12 per ton, trimmed in bunkers.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending April 8, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Laura C. Hall.....	Pacific Metals Transportation Co.	April 2.....	April 2.....	5	.....
Aegutla.....	Pacific Steam Navigation Co.	April 2.....	April 2.....	3	.....
Venezuela.....	Pacific Mail Steamship Co.	April 2.....	April 3.....	213	.....
Manavi.....	Pacific Steam Navigation Co.	April 4.....	April 4.....	.....	21
Laura C. Hall.....	Pacific Metals Transportation Co.	April 4.....	April 6.....	.....	43
Derblay.....	United States Shipping Board.....	April 4.....	April 6.....	32	104
Somme.....	United States Army.....	April 7.....	April 8.....	37	.....
Columbia.....	Pacific Mail Steamship Co.	April 8.....	.....	10	3

* Transport.

Sailing of the "Garfield."

The steamer *Garfield*, salvaged from Galera de Zamba Bay, and dry-docked at Cristobal on March 26 without the discharge of her cargo, cleared from Cristobal for Puerto Colombia on April 6.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending April 8, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Abangarez.....	United Fruit Co.....	April 2.....	April 3.....	236	268½
Crijnsen.....	Royal Netherlands W. I. Mail.....	April 2.....	April 4.....	70	(²)
Acajutla.....	Pacific Steam Navigation Co.....	April 2.....	April 2.....	1,009	
Laura C. Hall.....	Pacific Metals Transportation Co.....	April 2.....	April 4.....	66	55
Venezuela.....	Pacific Mail Steamship Co.....	April 3.....	April 4.....	1,350	124
Manavi.....	Pacific Steam Navigation Co.....	April 3.....	April 4.....		152
Sonora.....	French Line.....	April 3.....	April 4.....		368
Advance.....	Panama Railroad Steamship Line.....	April 3.....	April 5.....		359
Parismina.....	United Fruit Co.....	April 4.....	April 6.....	730	161
Tivives.....	United Fruit Co.....	April 5.....	April 6.....	20	1½
Metapan.....	United Fruit Co.....	April 5.....	April 6.....	332	164
Ucayali.....	Peruvian Line.....	April 5.....	April 5.....	1,767	
Amassia.....	Hamburg-American Line.....	April 5.....	April 6.....	78	(²)
Panama.....	East Asiatic Steamship Line.....	April 5.....	April 6.....	434	(²)
Salvador.....	Pacific Steam Navigation Co.....	April 5.....	April 5.....	881	
Savoia.....	Italian Line.....	April 5.....	April 6.....		4,039
Panama.....	Panama Railroad Steamship Line.....	April 5.....	April 7.....		2,378
Colombia.....	Pacific Mail Steamship Co.....	April 6.....	April 8.....	397	189
Norman Bridge.....	Pan-American Pet. and Transp. Co.....	April 7.....	April 7.....	6,000	
Calamares.....	United Fruit Co.....	April 7.....	April 8.....	238	195
San Benito.....	United Fruit Co.....	April 8.....	April 8.....	36	172

¹ Pounds.² No cargo laded.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the two weeks ended April 11:

Steamship *Arizonan*, dock and undock; remove starboard propeller and section of tail shaft; draw tail shaft inboard for examination; rewood 16 inches of stern tubing; reinstall tail shaft and intermediate section; repack stern gland; remove 2 bad order propeller plates and assemble 2 new spares on hub; install propeller; repair steering gear; raise rudder for examination of pintles and bushings; furnish crane service to handle weights for trimming ship; V. de G. C. *Almirante Latorre*, dock and undock; spot scale and clean bottom; paint bottom; tighten up rivets; install liner under paravane bracket; steamships *West Isleta*, remove broken studs and renew; *Eastern Queen*, renew bottom section of operating rod, main engine stop valve; renew front guide brass L. P. valve stem; weld cylinder head of L. P. balance piston; dock and undock, remove spare tail shaft from ship; patch up with intermediate shaft; manufacture coupling bolts; draw stern tube bushing, rewood, re-install, and install spare tail shaft; pack glands and install propeller; *Iowan*, furnish air to assist firemen fighting fire; *Santa Paula*, dock and undock; stage and clean; paint bottom 1 coat anticorrosive and 1 coat of antifouling, paint to be furnished by ship; *Derblay*, repair steering gear supports and install new bracket; launch *Petroleo*, miscellaneous engine repairs; renew sternpost; patch and renew copper; renew planks on bow as necessary; tug *Favorite*, conversion from coal to oil burner.

Deceased Employee.

The estate of the following deceased employee of The Panama Canal or the Panama Railroad Company is now in process of settlement, and any claims against this estate, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due him, should be presented at the office of the Administrator of Estates at once in order that the estate may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. This name will be published but once.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Charles Weathers.....	38781	Barbados.....	Colon.....	Quartermaster.....	April 3, 1922.

Official Circulars.

Acting Superintendent, Mechanical Division.

THE PANAMA CANAL,
EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., April 8, 1922.

To all concerned—Effective April 10, 1922, and during the absence of Commander Roy W. Ryden, U. S. N., on leave, Mr. Herbert H. Evans will act as Superintendent of the Mechanical Division.

JAY J. MORROW,
Governor.

Morning Passenger Train from Panama Not to Stop at Miraflores Locks.

PANAMA RAILROAD COMPANY,
OFFICE OF MASTER OF TRANSPORTATION,
BALBOA HEIGHTS, C. Z., April 12, 1922.
CIRCULAR No. 139:

To all concerned—Please refer to my circular No. 101, dated January 3, 1922, reading as follows:

"Effective at once, and until further orders, train No. 2 will make stop at Miraflores Locks daily, except Sundays and holidays, to let off employees."

Effective Monday, April 17, train No. 2 will not stop at Miraflores Locks to let off passengers.

W. F. FOSTER,
Master of Transportation.

Lumber Prices.

THE PANAMA CANAL,
SUPPLY DEPARTMENT,
BALBOA HEIGHTS, C. Z., March 31, 1922.
HEADS OF DEPARTMENTS AND DIVISIONS:

Effective April 1, 1922, the following prices will be allowed by the Supply Department for second-hand lumber, scrap lumber, and serviceable lumber, and lumber which may be included in material classified as scrap for which requests for the purchase of small quantities are received from time to time:

Kind of lumber.	Credit to be allowed departments and divisions.	Issue and sales prices.	
		To departments and divisions.	To employees, individuals, and companies.
Flooring, second-hand	\$20.00	\$25.00	\$30.00
Ceiling, second-hand	20.00	25.00	30.00
Siding, second-hand	20.00	25.00	30.00
Lumber, dimension sizes, second-hand	15.00	20.00	25.00
Miscellaneous yellow pine and fir, serviceable lumber included in material classified as scrap lumber	15.00	20.00	20.00
Miscellaneous fancy and hardwood lumber, including all classes of native lumber included in material classified as scrap lumber	(¹)	(²)	(²)
Miscellaneous scrap lumber	17.00	28.00	.....

¹ Fifty per cent of stock card prices of the same kind of new lumber less \$5 per thousand.

² Fifty per cent of stock card price of same kind of new lumber.

³ Carload.

The unit prices above specified, except under the items of scrap lumber, are prices per thousand feet, board measure.

No second-hand lumber will be sold to employees or outsiders at the present time, as all such material is required for issue to settlers on Canal Zone lands.

R. K. MORRIS,
Chief Quartermaster.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa.

For coal in large quantities as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;
(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (d).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Binders for The Panama Canal Record.

Cardboard covers, punched and fitted with brass fasteners, forming binders for THE PANAMA CANAL RECORD, are offered for sale at 25 cents a set, for the benefit of those who wish to keep a file of the issues for ready-reference. Orders may be addressed to The Panama Canal, Balboa Heights, Canal Zone, or The Panama Canal, Washington, D. C.

Sale of Tugboat "Empire."

Sealed bids in triplicate will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., and also at the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, Canal Zone, not later than 10.30 a. m. on the 17th day of April, 1922, at which time they will be opened in public simultaneously in both offices, for the purchase of the seagoing tugboat *Empire*, 120 feet over-all length, located at Balboa, Canal Zone. Detailed information with photographs, if desired, and form of proposal (Circular No. 1471) may be had upon application to the offices of the General Purchasing Officer or the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids in its discretion.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., April 19, 1922.

No. 36.

Canal Tug Assisting Two Ships in Distress.

The Panama Canal tug *Gorgona* is due to arrive at Balboa in the night of April 19–20, towing the tanker *W. J. Hanna*, which she was sent out to bring in from off the coast of Peru.

On the way back the *Gorgona* received a call for assistance from the American steamer *Derblay*, aground in Manta Bay, Ecuador. Leaving the *Hanna* at anchor temporarily, the tug endeavored to pull the *Derblay* free but was unable to do so and continued to port with the *Hanna*. Further orders with reference to the rescue of the *Derblay* have not been received.

The Panama Canal Salvage Section.

The representative of the United Salvage Association, underwriters in New York, who came to the Isthmus in connection with the salvaging of the steamship *Garfield* in Colombian waters, expressed himself, in conversation with the Marine Superintendent of The Panama Canal, as "amazed at the wrecking equipment and wrecking ability of The Panama Canal salvage section." He stated his belief that the work of the section was equal to that of the foremost wrecking company in the United States.

The salvage equipment of the Canal consists primarily of the wrecking tug *Favorite*, supplemented by tugs, barges, floating cranes, etc., as may be needed, and a full supply of ground tackle, wire and chain cable, diving equipment, and the other requisite material and personnel for wrecking operations.

The *Favorite* is 195 feet in length over all, 180 feet between perpendiculars, with a beam of 43 feet and molded depth of 20 feet 6 inches. Her gross tonnage is 1,223 tons, and she has cargo space for about 800 tons, in addition to which she can carry about 500 tons of water. On account of her carrying a great amount of water ballast she can lighten ship when necessary to operate in shoaler waters than her ordinary draft would allow. This feature was of great value in the work on the *Garfield*. The *Favorite* is now being converted from a coal-burner to an oil-burner; with oil fuel she will be able to stay away from port for as long as 30 days without the need of refueling.

The *Favorite* is equipped with a 25-ton boom forward and a 5-ton boom aft, and fitted with a machine shop containing an air compressor, power saw, cutter, shaper, punching machine, and other handy tools. She carries a 200-kilowatt generator.

The pumps are an important factor and have been increased since the *Favorite* was placed in the Canal service, to which she was transferred from wrecking service for the Navy, which used her on the coast of France during the World War. Prior to that she was operated

(Continued on page 458.)

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, April 15, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Toba Maru	8	18	45	9	6	28	9	15	10	9	445.0	58.0	25.4	New York	Japan	General, oil, etc.	8,790	8,058	5,743
San Joaquin	9	1	48	9	7	22	9	16	06	9	425.4	57.1	25.0	Tampico	Tocopilla	Crude oil	9,200	7,039	5,043
Patrick Henry	9	5	37	9	8	12	9	17	07	10	439.6	60.2	29.0	Galveston	Shanghai	General	9,804	8,987	6,534
Acajutla	2	18	25	9	9	10	9	17	07	9	215.7	23.5	13.8	Cristobal	Champerico	General	246	1,273	706
Ohioan	9	10	35	9	10	40	9	17	48	9	407.0	53.7	23.5	New York	Los Angeles	General	5,017	7,112	4,896
Tekoa	10	18	34	11	6	25	11	13	47	11	480.6	62.8	27.0	Liverpool	Auckland	General	5,248	10,259	7,092
Dinteljik	10	6	37	11	7	25	11	14	36	11	485.0	62.0	26.6	Hamburg	Tacoma	General	10,165	10,786	7,351
Pear Branch	10	20	08	11	8	20	11	16	57	11	398.6	53.0	22.0	Liverpool	Valparaiso	General	4,429	5,760	3,866
North American	10	17	47	11	8	45	11	18	00	11	251.0	43.0	22.0	Baltimore	Callao	Coke, general	2,700	2,444	1,571
Yare	9	13	25	11	8	45	11	17	46	11	232.0	35.0	11.1	Baltimore	Guayaquil	General	70	1,496	1,040
Liebre	11	10	30	11	13	00	11	19	07	11	435.0	56.2	30.0	New York	Valparaiso	Fuel oil	10,400	7,567	5,089
Charlton Hall	11	7	42	11	12	00	11	20	07	11	400.0	50.0	26.0	New York	Talcahuano	General	6,300	5,714	4,161
Plako	11	14	38	12	6	15	12	14	00	12	450.0	58.0	27.6	New York	Auckland	General, steel	7,092	8,459	6,060
Tokien	12	9	40	13	6	18	13	14	01	13	378.0	54.0	24.6	St. John's	Honolulu	Coal	7,167	6,225	4,568
Orinoco	12	13	25	13	7	26	13	14	59	13	376.0	52.0	24.3	Baltimore	Los Angeles	Steel	6,889	5,455	3,902
Hauaki	12	6	25	13	8	07	13	17	30	13	450.3	58.0	23.9	Glasgow	San Francisco	Coal	4,022	9,211	6,721
Tiger	13	2	58	13	8	58	13	17	26	13	410.0	56.0	23.0	Baltimore	Seattle	General, steel	6,000	8,243	6,312
Lewis Luckenbach	13	7	39	13	9	40	13	18	21	13	496.0	68.2	24.0	Philadelphia	Vancouver	General	8,200	11,487	8,732
Ucayali	5	15	45	13	11	13	19	12	13	23	374.0	46.0	18.6	Cristobal	Callao	General	635	4,466	2,405
Malla Maru	13	3	22	13	11	50	13	20	06	13	400.0	53.0	26.6	New York	Yokohama	General	7,007	5,907	4,304
Steel Age	13	5	16	13	13	05	13	20	49	13	395.0	55.0	27.1	New York	Vancouver	Steel, general	8,105	7,285	5,256
Argosy	14	1	26	14	6	50	14	13	48	14	390.0	54.2	24.8	New York	Talcahuano	General, coal	5,265	6,203	4,307
Henry S. Grove	14	7	28	14	8	45	14	15	03	14	404.6	53.0	19.0	Baltimore	San Francisco	General	3,000	6,755	4,688
Lompoc	14	12	10	14	12	25	14	19	43		435.3	55.9	26.0	Tampico	Balboa	Fuel oil	9,500	7,496	5,311
Tredenhall	14	19	49	15	6	45	15	15	42	15	479.0	62.0	27.0	New Orleans	Auckland	General	9,629	9,458	6,867
Salvador	5	15	40	15	9	24	15	16	19	17	215.0	33.0	15.1	Cristobal	Champerico	General	928	1,213	692
Fonia	15	1	37	15	12	21	15	18	53	16	394.4	53.2	23.0	Copenhagen	San Francisco	General	4,776	6,744	4,016
Barge No. 3.														Cristobal	Gatun Lake	Ballast			

= Motor ship.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Port of Origin	Ship	Company	Arrival	Departure	Destination	Remarks
Balboa	8 13 35	9 6 42	9 14 22	10 6 09	Swedish	
Rapah	8 13 40	9 7 49	9 15 31	10 5 05	British	
Gothic Star	8 17 05	9 8 42	9 16 40	10 5 05	British	
Munindes	9 7 30	9 7 43	9 16 50	9 22 20	American	
Cedar Branch	9 7 00	9 11 15	9 18 25	10 6 13	British	
Rotarian	9 6 00	9 12 28	9 19 50	10 1 55	American	
Reijo Maru	9 13 00	9 10 41	10 13 55	10 15 45	Japanese	
Santa Isabel	9 20 52	10 7 42	10 14 40	10 18 10	American	
F. J. Luckenbach	9 23 00	10 7 55	10 15 15	10 15 16	American	
Santa Luisa	10 5 00	10 9 38	10 16 17	10 19 10	American	
Montgomery	10 9 05	10 10 40	10 17 40	10 23 15	American	
City	10 9 55	10 11 03	10 18 40	11 16 02	Norwegian	
Sarpis	10 9 55	10 11 28	10 20 25	11 16 50	French	
Saint Andre	10 13 30	10 14 34	10 21 40	11 6 13	British	
Peshawar	11 0 05	11 7 43	11 15 05	11 15 05	German	
Hamburg	11 4 10	11 8 36	11 16 55	11 18 55	American	
Santa Rosa	11 9 15	11 10 54	11 18 08	11 19 45	British	
Palm Branch	11 13 00	11 13 54	11 21 31	11 23 57	British	
Sussex	11 8 10	11 6 54	12 14 25	12 6 03	American	
Chaumont	12 5 30	12 7 57	12 16 13	12 18 08	Japanese	
Miss Cristobal	12 5 30	12 7 57	12 16 13	12 18 08	Japanese	
Eastern Queen	26 19 15	13 10 47	13 18 31	13 19 00	American	
Gen. H. F.	13 16 08	14 6 44	14 14 40	14 15 35	American	
Hodges	13 21 00	14 8 10	14 15 35	14 15 35	American	
Artigas	14 6 45	14 9 10	14 16 15	15 18 15	British	
Alvarado	14 22 45	15 7 56	15 15 02	15 15 02	Japanese	
Blavana Maru	15 1 20	15 8 17	15 16 30	15 18 45	British	
Leitrum	15 3 20	15 9 40	15 16 38	15 19 10	British	
Australbrook	15 4 25	15 9 53	15 16 38	15 19 10	British	
Mineola	15 3 00	15 11 03	15 18 08	15 2 49	Peruvian	
Urubamba	15 12 05	13 13 01	13 20 25	15 21 05	American	
Neveadan	15 12 05	13 13 01	13 20 25	15 21 05	American	
Johnson Line	427 0	56 2	28 2	427 0	Stockholm	General
New Zealand Shipping Co.	457 3	59 0	24 6	457 3	Honolulu	General
Blue Star Line	420 6	54 7	25 0	420 6	Auckland	Cold storage
Munindes Steamship Co.	370 0	53 1	23 0	370 0	Pertland	Gold storage
F. & W. Ritsen	390 5	51 0	22 0	390 5	London	Lumber
United States Shipping Board	380 3	51 0	23 0	380 3	New York	General
Toro Kisen Kaisha	400 0	53 0	18 0	400 0	Plymouth	General
American and Cuban Line	251 1	43 6	15 6	251 1	Buenos Aires	General
Luckenbach Line	446 0	51 6	25 4	446 0	Bremen	Wool, tallow
Grace Line	360 2	56 0	23 4	360 2	New York	Celite
United States Steel Products Co.	424 2	56 2	23 0	424 2	New York	General
Thor Therssen Line	354 8	59 3	25 7	354 8	Los Angeles	General
General Transatlantic Co.	397 3	59 3	25 0	397 3	Talcahuano	General
Peninsula and Orient S. S. Co.	449 3	59 3	25 0	449 3	Boston	General
Deutsch-Australische Line	449 4	59 3	25 0	449 4	New York	Nitrate, general
Grace Line	404 6	53 9	28 4	404 6	Bordeaux	Nitrate, general
F. & W. Ritsen	360 0	45 0	23 0	360 0	London	Frozen, general
Federal Steam Navigation Co.	420 0	54 0	20 6	420 0	Hamburg	General
United States Navy	448 0	58 0	20 0	448 0	Charleston	Nitrate
Nippon Yusen Kaisha	24 4	7 0	2 0	24 4	Liverpool	General
L. W. Parsons	384 0	51 1	21 0	384 0	New York	General
United States Shipping Board	323 5	39 0	17 6	323 5	Philadelphia	General (Navy)
Panama Railroad Steamship Line	390 0	54 2	20 6	390 0	New York	General
United States Shipping Board	303 0	43 0	13 6	303 0	Cristobal	General
McAndrews & Co.	408 0	51 0	20 8	408 0	Baltimore	General
Osaka Shosen Kaisha	470 0	60 2	24 6	470 0	New York	General
Union Steamship Co.	375 5	52 2	21 0	375 5	Portland, Me.	General
Commonwealth Government	298 6	40 0	16 1	298 6	New York	General
Grace Line	381 2	46 1	18 6	381 2	Liverpool	General
Peruvian Line	368 6	55 2	25 6	368 6	Celano	General
American-Hawaiian Line	368 6	55 2	25 6	368 6	Salaverry	General
					Callao	General
					Coos Bay	Lumber

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
April 9	Zacapa	United Fruit Co.	New Orleans via Habana.	April 10	Zacapa	United Fruit Co.	Bocas del Toro.
April 9	Martinique	French Line	St. Nazaire and wayports.	April 11	Nubian	Leyland Line	Nuevitas.
April 9	Nubian	Leyland Line	St. Nazaire via wayports.	April 11	Solana	Pacific Mail Steamship Co.	Tampico.
April 9	Solana	Pacific Mail Steamship Co.	Liverpool via wayports.	April 12	Pastores	United Fruit Co.	New York via wayports.
April 10	Cartago	United Fruit Co.	Tampico.	April 13	Cartago	United Fruit Co.	New Orleans via wayports.
April 10	Pastores	United Fruit Co.	New Orleans	April 13	San Blas	United Fruit Co.	Port Limon.
April 11	Advence	Panama Railroad Steamship Line.	Puerto Colombia via wayports.	April 13	Zacapa	United Fruit Co.	New Orleans.
				April 13	Martinique	French Line	St. Nazaire and wayports.

(Continued on page 462, column 2.)

The Panama Canal Salvage Section.—Continued from page 455.

on the Great Lakes by the Great Lakes Towing Company, of Duluth. The pumps on the *Favorite* now include 4 portable 12-inch centrifugal gasoline-driven wrecking pumps and four 4-inch submersible electric salvage pumps, of a total capacity of 2,440 tons of discharge an hour. In addition, there are a number of portable steam-driven pumps which can be placed in service to augment this capacity.

CONDITIONS OF WRECKING OPERATIONS.

The Panama Canal will undertake salvage operations under three forms of contract:

(a) Hire *Favorite* and wrecking crew at \$1,500 per day, with extra charge for all equipment used except standing equipment on *Favorite*.

(b) Fixed price for job with graduated reimbursement in case of failure or partial success.

(c) No cure, no pay. Fixed price dependent on value of ship and cargo and difficulties involved, with graduated payment in case of partial success.

Of the three types of contract The Panama Canal would recommend to owners and underwriters the use of the first type for the following reasons:

It obviates any delay, since all that is necessary is to cable or radio The Panama Canal to go get the ship, when the *Favorite* will be placed on the daily salvage rate and despatched immediately. Very frequently promptness in this saves much time and consequent expense in the completion of the job. In the case of the *Garfield* it is probable that two-thirds of the time would have been saved. This plan will also in almost every case save from 50 to 100 per cent in cost to the owners and underwriters.

This is true because The Panama Canal maintains salvage equipment for the service of shipping and as part of the Canal's duty to shipping, particularly since this part of the world does not offer sufficient inducement to salvage companies to maintain adequate equipment in these waters.

Therefore the service is more or less noncommercial, since it is to the best interest of the Canal to expedite shipping in every manner possible, and the efforts of the wrecking crews are to make a record of quick work for the Canal rather than to draw the work out in order to make the money return greater. This attitude of the wrecking crew is clearly shown in the *Garfield* case.

This contract is, of course, most satisfactory to the Canal as it assures proper return for services rendered.

The other types of contract are standard types and need no explanation.

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the two weeks ended April 17:

Steamships *Acajula*, repair deck of starboard water closet; renew soft wood deck on port side of saloon deck over butcher shop; make and install new flagstaff for forecable head; repair Venetian window in captain's room; supply and fit new hinge on entrance door to ice house; re-cement deck in galley; make new bridge pillar for steering engine reducing valve; renew handle of scales in No. 3 hatch; supply and fit 1 angle flooring support in engine room; *Salvador*, furnish and fit dioptric lens in starboard side light; clean and paint captain's room; clean and paint chief officer's room; straighten starboard forward lifeboat davit; overhaul and adjust starboard break windlass; supply and fit 1 log spar 17' long, 12" circumference, at one end and 10" at other end; supply brass locking screw for sounding machine; supply new glass in saloon skylight; repair water tank and shelves in stateroom No. 24; repair hot plate and steam pipes in pantry, also steam valves in hot water tank; repair lead flashing in refrigerator chamber; *West Himrod*, repair bow on starboard side; *Solana*, repair steam gauge; manufacture two 90° 1½" steel wrenches; make 5 bearing scrapers as sketches, of tool steel; schooner *Arabia*, rebush stern bearing; repair main engine exhaust line; clean bottom; repair copper; repair stem and put on new chain plates; calk deck and repair bulwarks, etc.; *Ucayali*, *Manavi*, *Paris-*

mina, minor repairs; *Cartago*, repair studs, etc.; *Advance*, overhaul bilge suction manifold; reseal and grind in valves; repair drain pipe; repair-motor boat foundation; *Colon*, repairs to exhaust line of filter box; U. S. S. *O-11*, manufacture 50 blank bolts; U. S. S. *O-13*, manufacture 50 blank bolts; steamships *General O. H. Ernst*, repair winch, etc.; *Jamaica*, repair anchor windlass; *Orita*, braze copper pipe on deck line.

Coal Prices.

By courtesy of Willard, Sutherland & Company, Inc., of New York, the following prices are quoted from their latest circulars received on the Isthmus:

COAL BUNKERING PRICES AT U. S. AND CANADIAN PORTS AS OF MARCH 20, 1922.

New York, \$5.75 Valona coal, \$6.50 Varden coal f. a. s.
Philadelphia, Baltimore, \$5.10 Valona coal, \$5.65 Varden coal f. o. b. piers. Trimming extra.
\$5.85 Valona coal, \$6.40 Varden coal, t. i. b., ex lighters.

Newport News, Sewalls Point, Lamberts Point, \$4.75 Navy List Mines f. o. b. under chutes at coal piers.

Portland, Me., \$8.50 t. i. b. ex lighters, Pocahontas or New River.

Boston, \$7.50 t. i. b. ex lighters, Pocahontas and/or New River.

Wilmington, N. C., \$8.90 t. i. b. ex lighters, Pocahontas and/or New River.

Charleston, \$4.85 f. o. b. piers Best Kentucky and/or Virginia.

Savannah, \$6 t. i. b. piers Best Kentucky and/or Virginia.

Jacksonville, \$8 t. i. b. alongside suppliers' wharf, Pocahontas or New River.

Tampa, \$10 t. i. b. alongside suppliers' wharf.

Pensacola, \$5.25 high grade Black Creek, \$4.75 Cahaba, f. o. b. and trimmed, \$4.60 Pratt.

Mobile, \$4.75 washed Black Creek, \$4.50 washed Cahaba or unwashed Black Creek t. i. b. under chutes.

*New Orleans, \$5.90 Sipsey, \$5.55 Warrior River, \$5.55 Pratt R/M t. i. b. ex lighters.

Galveston, \$8.75 Sipsey washed, \$8.50 Pratt M/R t. i. b. ex lighters alongside Galveston Wharf Co. wharves.

San Diego, \$12.75 Australian bunker coal f. o. b. alongside dock.

Los Angeles Harbor, \$12.75 Utah steam coal f. o. b. alongside dock.

San Francisco, \$10.75 Utah steam coal, \$11.75 Welsh coal f. o. b. ex lighters.

Seattle, \$10 Comox steam coal f. a. s. ex lighters.

Portland, Oreg., \$11 Utah mine run f. o. b. ship's hatch at bunker dock.

Astoria, \$12.50 Comox steam coal f. o. b. ship's hatch.

Tacoma, \$11 f. a. s. ex lighters.

CANADIAN PORTS.

Union Bay, Vancouver, \$8.30 Comox steam coal f. o. b. under chutes at coal piers.

Halifax, \$9.25 t. i. b. ex lighters.

North Sydney, N. S., \$6.75 t. i. b.

Sydney-Louisburg, \$6.75 t. i. b.

Pictou, N. S., harbor closed for season.

Montreal-Quebec, harbor closed for season.

Port Hastings, \$7.65 t. i. b.

St. John's, N. F., \$15.25 f. a. s. screened North Sydney coal.

St. John, N. B., \$9.25 t. i. b.

COAL BUNKERING PRICES AT FOREIGN PORTS AS OF MARCH 7, 1922.

Adelaide, 46/- to 51/- according to point of delivery.

Aden, 55/- Welsh, 50/- South African.

Albany, Australia, 55/6.

Algiers, 38/6 Welsh and/or Durham.

Amsterdam, upon application.

Almeria, upon application.

Antwerp, 31/- Welsh, 29/6 North country.

Azores, 50/-.

Bahia, 62/6.

Bahia Blanca, 54/-.

Balboa, \$10 to \$15 according to quantity and method of delivery.

Barbados, 51/-.

Barcelona, upon application.

Batavia, Fl. 32.50 to 37.50 according to quality and point of delivery.

Bermuda, \$10.75.

Bilbao, upon application.

Bombay, Rs. 24.

Bordeaux, current price Welsh Thro'.

Brake, 31/6- Durham unscreened.

Bremen, 31/6- Durham unscreened.

Bremerhaven, 31/6- Durham unscreened.

Brisbane, Australia, 18/2 to 24/4, according to quality and point of delivery.

Brixham, 35/- Denaby coal.

Brunsbüttelkoog, 32/-.

Buenos Aires, 50/-.

Cairns, Australia, 65/6.

Cape Town, 35/- to 39/- according to quality.

Cardiff, 24/6-.

Cartagena, upon application.

Colombo, 40/- to 54/- according to quality.

Colon, \$10 to \$12 according to quantity and method of delivery.

Constantinople, 50/- Admiralty Welsh, 47/-

Welsh, 35/- best Turkish.

Copenhagen, 38/-.

Corubian, upon application.

Coronel, upon application.

Corunna, upon application.

Curacao, \$11.50.

Dairen, upon application.

Dakar, 43/- from March 10.

Dartmouth-Portland, 34/- Welsh or North

Country coal.

Delagoa Bay, 31/- Transvaal coal.

Dover, 32/6 Durham, Welsh or Chisle.

Drontheim, upon application.

Dunkirk, upon application.

Emden, 31/6- Durham unscreened.

Falmouth, upon application.

Fowey, upon application.

Fremantle, 55/6.

Geestmunde, 31/6- Durham unscreened.

Gibraltar, 38/6- plus 1/- export tax.

Glasgow, 22/- to 25/- according to quality.

Gothenborg, Kr. 40.

Grimsby, 22/- to 25/- best steam.

Hamburg, 28/3 Durham unscreened.

Havre, current prices Welsh Thro', Nor-

thumberland.

Honolulu, \$12.50 to \$14 Welsh according to

quantity, \$12 to \$13.50 Australian according to

quantity.

Hook of Holland, 32/3 Durham coal.

Huelva, upon application.

Hull, 22/- to 25/- best steam.

Karachi, 24 rupees.

Kingston, 50/-.

La Plata, 50/-.

Las Palmas, 38/-.

Leith, 23/- to 27/-.

Liverpool, 23/- to 30/- according to quality.

London-Gravesend, 34/- Durham, 36/6 Welsh.

Lota, upon application.

Madeira, 40/-.

Malaga, upon application.

Malta, 42/- Welsh.

*Sipsey, Warrior River, 30 cents less for delivery at coal tipple.

Coal Prices.—Continued.

COAL BUNKERING PRICES AT FOREIGN PORTS
AS OF MARCH 7, 1922.—Continued.

Marseilles, current price Welsh.
Mauritius, 70/- S. African coal.
Melbourne, 40/6 to 43/6 according to point of delivery.
Middlesbro, 23/6 to 25/- according to quality.
Montevideo, 50/-.
Newcastle, Australia, 21/-.
Newcastle, U. K., 23/6 to 25/- according to quality.
Newport, 24/6.
Northham, 31/5 Durham unscreened.
Oran, 37/-, 38/6 from March 6.
Padang, Fl. 27.
Pernambuco, 62/6.
Piraeus, 45/-.
Plymouth, 34/- North Country or Welsh.
Port Kembla, 24/-.
Port Natal, 31/3 to 32/9 according to quality.
Port Pirie, 41/6 to 43/-.
Port Said, 46/6 British.

Port Talbot, 24/6.
Pulo Laut, S. E. Borneo, Fl. 20.
Rio de Janeiro, 55/-
Rosario, 52/6.
Rotterdam, 29/9 Durham coal.
St. Lucia, 51/-.
St. Thomas, V. I., 50/-.
St. Vincent, C. V. I., 42/6. From March 13.
Santos, 57/6.
Singapore, 45/- to 57/6 according to quality.
Sourabaya, Fl. 30 to 35 according to quality and point of delivery.
Southampton, upon application.
Swansea, 24/6.
Sydney, Australia, 37/6.
Tarragona, upon application.
Teneriffe, 38/-.
Townsville, Australia, 56/6 to 66/6 according to point of delivery.
Trieste, 42/-.
Trinidad, 50/-.
Valencia, upon application.
Vigo, upon application.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Cristobal for Week Ending April 15, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Acacjula	Pacific Steam Navigation Co.		April 9		237
Zacapa	United Fruit Co.	April 9	April 10	(*)	113
Solana	Pacific Mail Steamship Co.	April 9	April 11	9,700	(*)
Varg	Caribbean Steamship Co.	April 9	April 11	63	11
Nubian	Leyland Line	April 9	April 11	624	(*)
Balboa	Johnson Steamship Line	April 9	April 10	(*)	89
Martinique	French Line	April 9	April 13	10	604
Saint Andre	French Line	April 10	April 11	18	(*)
Dinteldyk	Holland-American Line	April 10	April 11	70	
Sarpfos	Caribbean Steamship Line	April 10	April 11	17	(*)
Cartago	United Fruit Co.	April 10	April 13	1,393	1
Pastores	United Fruit Co.	April 11	April 12	324	228
Advance	Panama Railroad Steamship Line	April 11		450	
San Blas	United Fruit Co.	April 12	April 13	14	60
Ucayali	Peruvian Line		April 13		633
Zacapa	United Fruit Co.	April 13	April 13	(*)	5
P. de Satrustegui	Spanish Line	April 13	April 15		242
Colon	Panama Railroad Steamship Line	April 13		340	
Gen. H. F. Hodges	Panama Railroad Steamship Line	April 14		2,409	
Gen. O. H. Ernst	Panama Railroad Steamship Line	April 14		796	
Coronado	Panama Railroad Steamship Line	April 14		2,506	
Alvarado	Elders & Fyffes, Ltd.	April 14	April 14	34	150
Fionia	Pacific Steam Navigation Co.	April 14	April 15	258	(*)
Delft	East Asiatic Co.	April 15	April 15	69	(*)
Urubamba	Royal Netherlands W. I. Mail	April 15		354	
Mineola	Peruvian Line	April 15		1,600	
	Grace Line	April 15	April 15	290	(*)

* No cargo discharged.

* No cargo laded.

* Box.

* Pounds.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Balboa for Week Ending April 15, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Acacjula	Pacific Steam Navigation Co.	April 9	April 9		14
Chaumont	United States Army	April 11	April 12	13	
Adour	L. K. Salvosch	April 12	April 13	325	
Rakuyo Maru	Toyoi Kisen Kaisha	April 12	April 12	43	74
Aysen	South American Steamship Line	April 15		163	
Salvador	Pacific Steam Navigation Co.	April 15	April 15		3

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal Washington."

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective April 15, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.25
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.50
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.56
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.15
Paint, zinc, white, in oil.....	Lb.	.16
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.14
Waste, cotton, white.....	Lb.	.15

Official Circulars.**Act of Congress.—Second Deficiency Appropriation, 1922.**

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., April 6, 1922.

CIRCULAR NO. 600-82:

The extracts from an Act of Congress quoted below are published for the information of all concerned.

JAY J. MORROW,
Governor.

AN ACT Making appropriations to supply deficiencies in appropriations for the fiscal year ending June 30, 1922, and prior fiscal years, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply deficiencies in appropriations for the fiscal year ending June 30, 1922, and prior fiscal years, and for other purposes, namely:

DEPARTMENT OF STATE.**PAYMENT TO THE GOVERNMENT OF COLOMBIA.**

To enable the Secretary of State to pay to the Government of Colombia the first payment from the Government of the United States to the Republic of Colombia under article 2 of the treaty of April 6, 1914, due within six months after ratifications of said treaty have been exchanged, \$5,000,000.

RELIEF AND PROTECTION OF AMERICAN SEAMEN.

For relief and protection of American seamen in foreign countries, and in the Panama Canal

Zone, and shipwrecked American seamen in the Territory of Alaska, in the Hawaiian Islands, Porto Rico, and the Philippine Islands, fiscal year 1920, \$13,198.73.

EXPOSITION, CITY OF PANAMA.

For participation in an exposition to be held in the City of Panama, including the same objects specified under this head in the Diplomatic and Consular Appropriation Act for the fiscal year 1916, \$95.47.

AUDITED CLAIMS.

SEC. 2. That for the payment of the following claims, certified to be due by the General Accounting Office under appropriations the balances of which have been exhausted or carried to the surplus fund under the provisions of section 5 of the Act of June 20, 1874, and under appropriations heretofore treated as permanent, being for the service of the fiscal year 1919 and prior years, unless otherwise stated, and which have been certified to Congress under section 2 of the Act of July 7, 1884, as fully set forth in House Document Numbered 174, reported to Congress at its present session, there is appropriated as follows:

WAR DEPARTMENT.

For armament of fortifications, Panama Canal, \$1,370.28.

For searchlights for seacoast fortifications, Canal Zone, Panama Canal, \$60.

SEC. 4. This Act hereafter may be referred to as the "Second Deficiency Act, Fiscal Year, 1922."

Approved, March 20, 1922.

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THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL
PUBLISHED WEEKLY.

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at Cristobal, C. Z., under the Act of March 3, 1879.

Certifcate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical
information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., April 26, 1922.

No. 37.

Northwest Cargoes.

According to statistics gathered by a steamship agent at Seattle, between 2,000,000 and 2,500,000 boxes of Northwest apples are shipped annually to the United Kingdom. The steamship lines secured about 100,000 boxes of this total in 1920-1921 and approximately 500,000 boxes in 1921-1922. The balances went by rail to the east coast. The all-water route via the Panama Canal has an advantage both in rates and handling. Out of 30,000 boxes landed at Glasgow last fall from the S. S. *Moliere* only 4 were broken. The loss on shipments by water direct is ordinarily about one-half of one per cent. The assignment of new and specialized refrigerator ships to this trade is expected to develop it still further next year.

Shipments of Canadian wheat via Vancouver and Panama totaled 40,758 tons during January, February, and March, 1922. The further development of this trade also seems probable.

Hydrographic Information.

The Marine Superintendent of The Panama Canal authorizes the following memorandum to all concerned:

Hydrographic information, pertaining to floating derelicts, mines, logs, etc., light changes or failures, aids to navigation adrift, or any like information, important to navigators, is being broadcasted by radio by the local Hydrographic Office, acting for the Hydrographic Division, United States Navy.

When such information is received, whether by radiogram, letter, or verbally, it should be telephoned promptly to the Chief Hydrographer for confirmation and distribution. If of considerable importance, after being radioed and telephoned to the Port Captains by the Hydrographer, a local notice to mariners is gotten out, signed by the Governor, and mimeographed as a local circular. Also confirmation of the radiogram broadcasted is sent to the Communication Officer, U. S. Navy, the branch Hydrographic Office, Cristobal, and the Hydrographic Office, U. S. Navy, Washington.

If the information is of considerable importance and is received out of regular office hours, it should be telephoned to a hydrographer's residence, from whence it will be confirmed and distributed by radio and by telephone to the Port Captains' offices.

CANAL WORK IN MARCH.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of March, 1922:

BALBOA HEIGHTS, C. Z., April 15, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of March, 1922:

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal during the month of March, 1922, as compared with the preceding month and with the corresponding month of last year, was as follows:

	March, 1922.	February, 1922.	March, 1921.
Commercial vessels.....	234	210	255
Noncommercial vessels.....	15	22	37
Launches, etc. (under 10 tons measurement).....	4	6	11
Total vessels and craft through Canal.....	253	238	303

In addition to the foregoing, Panama Canal equipment consisting of floating cranes, barges, craneboats, graders, etc., was passed through locks as follows:

Gatun.....	23
Pedro Miguel.....	32
Miraflores.....	33

COMMERCIAL TRAFFIC.¹

Tolls.

Under the present dual method of assessing tolls, the revenue from this source was \$956,726.76. Had the net tonnage as determined by the Panama Canal rules of measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$185,694.92. These additional tolls would have been contributed by nationality of vessels as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$39,253.05	\$17,081.65	\$56,334.70
Chilean.....	2,428.80	2,428.80	4,857.60
Danish.....		893.60	893.60
Dutch.....	2,947.95	4,303.20	7,251.15
French.....	1,272.40	461.30	1,733.70
German.....	3,355.45	486.95	3,842.40
Italian.....	980.75		980.75
Japanese.....	3,157.70	2,410.00	5,567.70
Norwegian.....	5,560.80	765.95	6,326.75
Peruvian.....	3,015.25	3,015.25	6,030.50
Swedish.....	1,564.50	44.70	1,609.20
United States.....	47,433.52	42,833.35	90,266.87
Totals.....	110,970.17	74,724.75	185,694.92

The additional tolls which would have been assessed against United States vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$31,397.87	\$27,979.50	\$59,377.37
United States and Canal Zone ports.....	1,587.10	774.70	2,361.80
United States and United States possessions.....	2,042.70	1,936.00	3,978.70
United States and foreign ports.....	9,937.25	10,943.45	20,880.70
Between foreign ports.....	2,468.60	1,199.70	3,668.30
Totals.....	47,433.52	42,833.35	90,266.87

Of the \$185,694.92 additional revenue that would have been collected by using the Panama Canal rules exclusively, \$7,622.40 represents the additional tolls that would have been collected on account of deck cargo.

COMPARATIVE TRAFFIC STATISTICS.

The following tabulations permit a ready comparison of commercial traffic through the Panama Canal in March, 1922, with that of the preceding month along the lines indicated at the head of the various tables.

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Ships not paying tolls are classed as "noncommercial."

TONNAGE, TOLLS, AND CARGO CARRIED.

	March, 1922.	February, 1922.	March, 1921.	Average month for past year.
United States equivalent net tonnage.....	786,759	710,548	924,309	742,255
Panama Canal net tonnage.....	975,811	886,535	1,112,818	918,558
Registered gross tonnage.....	1,226,971	1,116,014	1,417,220	1,156,058
Registered net tonnage.....	776,034	700,126	917,441	736,709
Tolls.....	\$956,726.76	\$866,266.18	\$1,105,536.55	\$901,087.71
Cargo.....	960,089	838,074	1,184,563	841,495

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED.

	March, 1922.	February, 1922.	March, 1921.
United States equivalent net tonnage.....	3,362	3,351	3,624
Panama Canal net tonnage.....	4,170	4,182	4,364
Registered gross tonnage.....	5,243	5,264	5,557
Registered net tonnage.....	3,316	3,302	3,597
Tolls.....	\$4,088.57	\$4,086.16	\$4,335.44
Tons of cargo (all vessels).....	4,103	3,953	4,645
Tons of cargo (laden vessels only).....	4,424	4,411	4,844

AVERAGE TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate of such tolls per cargo ton varies in different ships as the ratio of cargo tonnage to the net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of March, 1922, by nationality of vessels.

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.01	\$1.06	\$1.02
Chilean.....	2.67	14.94	4.53
Danish.....		.79	.79
Dutch.....	1.02	.81	.90
French.....	1.71	.98	1.04
German.....	1.49	.80	1.23
Italian.....	2.99		2.99
Japanese.....	.75	.70	.74
Norwegian.....	.79	6.19	.96
Peruvian.....	4.41	1.89	2.34
Swedish.....	.64	.63	.64
United States.....	1.06	.94	1.01
Average rate all ships, March, 1922.....	.99	.99	.99
Average rate all ships, February, 1922.....	1.09	.97	1.03
Average rate all ships, March, 1921.....	.97	1.05	1.00

COMMODITY STATISTICS.

A classification of cargo passing through the Panama Canal during the month of March, 1922, has been compiled from declarations of cargo and manifests submitted by the ships' masters, and while incomplete, it is indicative of the kind and quantity of the various commodities carried by vessels transiting the Canal. From the cargo declarations and manifests submitted it was possible to classify by commodities 71 per cent of all cargo passing from the Atlantic to the Pacific, and 93 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith:

Commodity.	March, 1922.	February, 1922.	January, 1922.	December, 1921.	November, 1921.	October, 1921.
Atlantic to Pacific.						
Oils:						
Crude.....	41,504	41,755	65,862	48,272	30,144	68,891
Refined.....	32,679	28,893	28,407	46,970	47,944	25,840
Other.....	5,143	6,699	6,230	1,918	3,113	1,121
Manufactured goods:						
Iron and steel.....	130,906	109,575	78,020	81,168	65,071	48,074
Machinery, railroad material, etc.....	25,402	18,142	38,689	24,120	23,927	14,659
Coal and coke.....	50,487	32,545	37,587	46,462	52,850	21,512
Cotton, raw.....	7,507	18,218	8,793	37,614	20,807	14,725
Metals.....	27,665	12,246	10,992	22,007	10,052	8,880
Ammonia.....	6,716	8,783	10,767	11,592	7,447	12,072
Cement.....	4,364	4,662	2,675	10,809	5,233	2,681
Paper.....	2,543	2,198	2,569	5,077	2,900	2,813

Commodity.	March, 1922.	February, 1922.	January, 1922.	December, 1921.	November, 1921.	October, 1921.
Atlantic to Pacific.—Continued.						
Sulphur.....	2,000	15,400	18,025	4,000	2,500	.....
Tobacco.....	4,683	3,923	1,831	3,086	2,075	2,879
Other and general.....	240,353	139,786	183,144	174,015	112,618	150,290
Totals.....	581,952	442,825	493,591	517,110	386,681	374,437
Pacific to Atlantic.						
Nitrate.....	22,231	27,022	46,716	59,957	39,523	54,256
Manufactured goods: Iron, steel, etc.....	1,514	214	2,309	2,550	265	1,053
Wheat.....	23,212	57,514	29,333	35,127	110,831	128,375
Lumber.....	74,432	64,002	57,347	42,610	50,564	56,606
Barley.....	7,362	6,596	8,462	21,781	37,989	67,092
Oils:						
Crude.....	9,307	10,505	.....	4,723	26,617	670
Refined.....	10,272	10	42	16,165	10,169	9,713
Other.....	13,414	15,516	1,958	14,469	761	1,581
Canned goods:						
Fish.....	12,855	10,798	9,246	5,202	13,767	32,761
Fruit.....	20,544	8,428	11,729	15,982	19,808	25,547
Vegetables, milk.....	2,512	1,211	890	1,660	1,470	2,523
Ores.....	4,192	32,265	10,647	9,805	13,218	3,824
Metals.....	18,222	14,659	14,234	10,959	14,515	11,078
Fruit, dried and fresh.....	7,235	11,549	8,697	3,876	13,060	4,162
Sugar.....	6,386	3,624	12,679	29,879	11,210	20,261
Beans, peas.....	7,616	3,766	5,088	5,351	9,270	20,547
Flour.....	3,147	3,796	1,017	8,881	8,799	19,000
Phosphates.....	7,500	6,500	7,930	8,900	7,300	14,057
Cold storage.....	19,926	17,207	5,786	13,809	4,920	18,739
Cotton.....	4,837	3,428	4,238	6,660	4,886	12,592
Rice.....	801	400	1,621	6,401	4,678	4,054
Wool.....	20,581	18,363	16,024	5,555	4,349	9,081
Coffee.....	16,210	9,484	3,775	4,529	3,785	4,594
Ivory nuts.....	1,527	1,909	2,717	2,482	3,012	2,811
Cacao.....	2,518	1,866	3,917	4,745	2,862	3,844
Tea.....	1,308	38	410	1,394	1,983	3,950
Other and general.....	58,476	64,579	46,835	92,491	49,148	78,567
Totals.....	378,137	395,249	313,707	435,943	468,759	611,338

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	17	88,086	\$91,390.00	76,593	16	62,765	\$64,343.59	81,336
February.....	15	80,940	79,169.10	67,302	17	66,043	66,703.70	68,345
March.....	16	71,770	75,338.65	55,111	11	61,804	64,470.64	52,289
April.....	19	92,033	94,185.00	94,484	14	68,368	65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,724.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134
1922.								
January.....	28	138,928	141,404.35	119,413	20	108,921	111,440.00	86,862
February.....	25	117,512	116,235.50	94,548	19	89,862	84,133.82	84,330
March.....	34	162,572	161,738.65	141,648	25	128,988	124,465.78	123,657

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
January.....	14	59,738	\$64,769.85	70,058	23	96,877	\$93,268.20	98,075
February.....	8	41,024	42,951.75	35,018	20	90,441	94,082.01	108,285
March.....	18	94,823	96,782.80	83,978	8	34,066	31,378.00	30,025
April.....	13	61,176	61,590.00	60,231	12	56,019	53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,894	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	70,390	77,353.39	91,897
September.....	16	53,816	51,785.48	38,368	16	81,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,493	14	61,580	62,318.75	79,129
November.....	12	74,635	71,525.71	44,076	5	29,949	29,127.50	28,865
December.....	9	47,694	46,318.75	44,101	6	32,957	32,803.75	28,784
1922.								
January.....	6	34,546	34,756.25	23,575	7	31,550	30,646.95	28,831
February.....	8	39,163	36,706.25	49,424	6	32,909	31,538.75	21,119
March.....	16	84,766	86,531.95	99,633	9	51,848	46,731.40	37,310

CLASSIFICATION OF COMMERCIAL TRAFFIC BY NATIONALITY, MARCH, 1922.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific.							
British.....	45	154,333	195,916	235,967	148,207	\$190,008.15	189,651
Chilean.....	2	3,072	5,224	6,543	3,921	3,840.00	1,436
Dutch.....	2	6,465	9,191	10,323	6,425	8,081.25	7,944
French.....	4	14,243	15,567	19,636	12,412	17,408.00	16,258
German.....	4	9,019	12,191	13,849	8,095	11,273.75	7,579
Italian.....	1	3,353	4,310	5,868	3,579	4,191.25	1,400
Japanese.....	10	41,164	44,872	58,645	39,394	50,688.70	67,692
Norwegian.....	9	25,906	31,378	39,891	24,873	32,227.20	41,811
Peruvian.....	2	2,719	5,345	9,020	4,517	3,398.75	769
Swedish.....	2	4,062	5,434	6,572	4,912	4,956.30	7,716
United States.....	57	207,684	256,613	318,002	204,819	254,301.20	239,696
Totals.....	138	472,020	586,041	724,316	461,154	580,374.55	581,952
From Pacific to Atlantic.							
British.....	30	86,024	104,469	140,992	85,103	103,761.23	97,668
Chilean.....	2	3,072	5,224	6,543	3,921	3,840.00	257
Danish.....	2	8,888	10,003	11,364	7,251	11,110.00	13,970
Dutch.....	3	6,576	10,099	10,340	6,601	8,220.00	10,229
French.....	2	7,926	8,579	11,360	7,213	9,838.30	10,001
German.....	1	2,957	3,486	4,750	2,969	3,696.25	4,591
Japanese.....	2	7,912	10,250	12,808	7,874	9,890.00	14,120
Norwegian.....	4	10,570	12,550	16,877	10,625	9,448.93	1,525
Peruvian.....	3	5,409	8,132	12,619	7,191	6,743.15	3,557
Swedish.....	1	1,338	1,431	2,242	1,595	1,672.50	2,650
United States.....	46	174,067	215,547	272,760	174,537	208,131.85	219,569
Totals.....	96	314,739	389,770	502,655	314,880	376,352.21	378,137
Combined traffic both ways.							
British.....	75	240,357	300,385	376,959	233,310	293,769.38	287,319
Chilean.....	4	6,144	10,448	13,086	7,842	7,680.00	1,693
Danish.....	2	8,888	10,003	11,364	7,251	11,110.00	13,970
Dutch.....	5	13,041	19,290	20,663	13,026	16,301.25	18,173
French.....	6	22,169	24,146	30,996	19,625	27,246.30	26,259
German.....	5	11,976	15,677	18,599	11,064	14,970.00	12,170
Italian.....	1	3,353	4,310	5,868	3,579	4,191.25	1,400
Japanese.....	12	49,076	55,122	71,453	47,268	60,578.70	81,812
Norwegian.....	13	36,476	43,928	56,768	35,498	41,676.13	43,336
Peruvian.....	5	8,128	13,477	21,639	11,708	10,141.90	4,326
Swedish.....	3	5,400	6,865	8,814	6,507	6,628.80	10,366
United States.....	103	381,751	472,160	590,762	379,356	462,433.05	459,265
Totals.....	234	786,759	975,811	1,226,971	776,034	956,726.76	960,089

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscellaneous.	Total.
1921.						
January.....	284,111	129,939	60,564	21,373	21,732	517,719
February.....	268,727	75,532	55,859	18,844	16,271	435,233
March.....	291,937	188,548	85,275	20,731	27,100	613,591
April.....	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,669
1922.						
January.....	279,870	153,315	30,271	18,398	31,910	513,764
February.....	273,996	146,572	30,477	19,061	17,899	488,005
March.....	382,213	144,630	17,223	21,389	20,586	586,041
Average month.....	277,211	148,975	35,002	20,897	23,452	505,557

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DESTINATION OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
1921.						
January.....	163,295	170,861	56,082	94,583	32,898	517,719
February.....	119,271	168,904	66,958	62,507	17,593	435,233
March.....	139,889	146,075	118,053	153,910	55,664	613,591
April.....	141,584	135,622	131,967	64,155	19,508	492,506
May.....	125,091	103,143	82,499	82,582	21,114	414,429
June.....	143,217	106,369	83,063	46,298	36,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,486	70,551	50,719	487,219
September.....	268,758	90,105	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,615	115,980	136,940	84,391	49,743	575,669
1922.						
January.....	170,927	112,160	100,878	83,526	46,273	513,764
February.....	151,388	107,476	107,197	84,271	27,673	488,005
March.....	195,833	105,532	149,697	83,107	51,872	586,041
Average month.....	177,558	113,384	97,817	78,587	38,211	505,557

ORIGIN OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
1921.						
January.....	151,034	230,437	26,843	115,206	53,084	576,604
February.....	173,815	226,242	22,473	34,616	24,459	481,605
March.....	163,294	203,002	28,525	62,652	41,754	499,227
April.....	139,495	168,585	29,756	85,560	38,601	462,997
May.....	174,128	137,258	12,407	81,086	45,309	450,188
June.....	116,521	112,474	18,740	75,400	23,040	346,175
July.....	174,412	99,745	41,084	70,124	22,197	407,562
August.....	229,629	110,248	20,628	68,661	48,894	478,067
September.....	218,453	84,212	14,762	30,814	46,262	394,503
October.....	252,645	124,560	37,720	41,436	42,018	498,379
November.....	189,942	126,381	23,556	6,581	56,934	403,394
December.....	195,969	135,952	28,194	39,616	41,844	441,575
1922.						
January.....	152,992	100,224	16,860	27,172	35,504	332,752
February.....	142,693	110,778	21,594	42,950	80,515	398,530
March.....	175,669	104,847	15,008	48,575	45,671	389,770
Average month.....	176,712	138,330	23,876	55,362	43,072	437,422

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscel- laneous.	Total.
1921.						
January.....	293,836	188,133	49,947	23,295	41,393	576,604
February.....	175,324	163,690	74,363	18,056	50,174	481,605
March.....	190,683	189,793	83,700	21,228	13,823	499,227
April.....	189,209	197,311	53,334	22,043	1,100	462,997
May.....	201,548	140,940	73,705	21,549	12,446	450,188
June.....	155,147	136,292	18,324	26,112	10,300	346,175
July.....	205,690	134,047	23,123	28,770	15,932	407,562
August.....	231,830	104,279	27,256	22,022	2,670	478,067
September.....	204,820	140,555	26,478	17,114	5,536	394,503
October.....	259,613	170,189	18,222	30,955	19,400	488,379
November.....	196,974	164,345	20,446	16,760	4,869	403,394
December.....	191,277	192,575	25,550	21,739	10,434	441,575
1922.						
January.....	115,302	168,337	26,831	16,489	5,703	332,752
February.....	163,919	172,900	31,767	18,242	11,702	398,530
March.....	134,687	193,267	34,969	18,724	8,123	389,770
Average month.....	193,997	169,777	39,201	21,573	12,904	437,422

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of March, 1922, of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year:

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe.....		30.6		3.0
East coast of United States.....	13.8		38.0	
East coast of Mexico.....		11.1		52.0
Cristobal, C. Z.....		13.0		3.8
West coast of United States.....	10.3			0.6
West coast of South America.....		7.0		24.8
Australasia.....	5.9			12.4
Far East.....	53.0			36.8

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for the month of March, 1922, has been previously compiled and was published in THE PANAMA CANAL RECORD under date of April 12, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes for the month of March, 1922, for the preceding month, and for the corresponding month of last year.

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	March, 1922.	February, 1922.	March, 1921.	March, 1922.	February, 1922.	March, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise.....	34	25	16	25	19	11
United States and Far East.....	26	17	20	3	3	5
Europe and United States.....	6	4	8	7	9	12
United States and South America.....	14	11	15	11	12	17
Europe and South America.....	9	10	9	11	11	16
Cristobal and South America.....	7	12	9	8	10	9
Europe and Australasia.....	9	9	14	8	5	8
United States and Australasia.....	5	4	9		1	2
Europe and Canada.....	3	2	2	3	6	
Mexico and United States.....			5	2	1	6
Mexico and South America.....	2	4	7	4	2	7
Miscellaneous.....	23	16	26	14	19	22
Totals.....	138	114	140	96	98	115
	Panama Canal net tonnage.			Panama Canal net tonnage.		
	March, 1922.	February, 1922.	March, 1921.	March, 1922.	February, 1922.	March, 1921.
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise.....	162,572	117,512	71,770	128,988	89,862	61,804
United States and Far East.....	128,520	87,553	99,017	15,008	17,190	26,706
Europe and United States.....	26,581	21,827	38,020	33,071	41,867	61,259
United States and South America.....	43,265	31,968	51,760	28,413	40,011	60,290
Europe and South America.....	39,648	39,657	39,832	41,307	46,101	72,706
Cristobal and South America.....	12,543	15,278	14,504	12,552	14,312	12,542
Europe and Australasia.....	54,848	63,962	96,952	44,483	32,664	51,926
United States and Australasia.....	28,259	22,048	48,203		6,216	10,726
Europe and Canada.....	18,032	11,076	12,417	15,826	33,689	
Mexico and United States.....			24,114	9,854	6,050	31,641
Mexico and South America.....	10,076	20,573	36,994	19,788	10,354	37,065
Miscellaneous.....	61,697	56,551	80,008	40,480	60,214	72,562
Totals.....	586,041	488,005	613,591	389,770	398,530	499,227
	Panama Canal net tonnage.			Panama Canal net tonnage.		
	March, 1922.	February, 1922.	March, 1921.	March, 1922.	February, 1922.	March, 1921.
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise.....	141,648	94,548	55,111	123,657	84,330	52,289
United States and Far East.....	192,249	133,506	114,059	18,913	19,959	19,366
Europe and United States.....	22,735	6,700	25,412	54,268	61,122	94,803
United States and South America.....	25,879	23,921	51,697	29,098	48,333	71,187
Europe and South America.....	17,545	24,366	28,927	45,998	57,139	85,394
Cristobal and South America.....	3,441	3,645	4,435	3,813	4,723	7,809
Europe and Australasia.....	35,505	30,294	72,339	45,210	28,081	56,642
United States and Australasia.....	29,780	25,535	60,188		9,200	7,120
Europe and Canada.....	21,692	9,453	5,560	24,556	49,181	
Mexico and United States.....			43,105			
Mexico and South America.....	19,100	27,087	60,800			
Miscellaneous.....	72,378	63,820	114,946	32,624	33,181	53,374
Totals.....	581,952	442,825	636,579	378,137	395,249	447,984

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	130	556,753	\$558,306.30	87	340,727	\$341,041.25
Ballast.....	8	29,288	22,068.25	5	49,043	35,310.96
Totals.....	138	586,041	580,374.55	96	389,770	376,352.21
Steamships.....	133	573,224	567,865.85	93	380,979	368,125.96
Motor ships.....	1	5,627	5,653.75	2	8,719	8,147.50
Motor schooners.....	2	508	546.25	1	72	78.75
Barge.....	1	3,686	2,713.50			
Bark.....	1	2,996	3,595.20			
Totals.....	138	586,041	580,374.55	96	389,770	376,352.21

LATIN-AMERICAN TRAFFIC.

The following tabulations show the number of vessels, tonnage, and tons of cargo carried by vessels engaged in the Latin-American trade, classified by nationality, passing through the Canal during the month of March, 1922:

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British	19	44,249	53,421	69,789	43,181	\$54,805.59	49,408
Chilean	2	3,072	5,224	6,543	3,921	3,840.00	1,436
Dutch	1	1,605	3,123	2,672	1,629	2,006.25	1,044
French	2	6,244	7,032	8,570	5,371	7,626.45	4,612
German	4	9,019	12,191	13,849	8,095	11,273.75	7,579
Italian	1	3,353	4,310	5,868	3,579	4,191.25	1,400
Norwegian	4	8,705	10,751	14,002	8,704	10,881.25	13,584
Peruvian	2	2,719	5,345	9,020	4,517	3,398.75	769
Swedish	1	1,440	1,399	2,257	1,583	1,678.80	2,129
United States	14	39,751	49,689	63,373	40,027	45,277.05	39,329
Totals, March, 1922	50	120,157	152,485	195,943	120,607	144,979.14	121,290
Totals, February, 1922	46	105,066	130,801	173,971	107,759	126,473.90	107,459
Totals, March, 1921	67	199,703	240,486	315,677	200,306	247,013.95	296,193

PACIFIC TO ATLANTIC.

Nationality.	No. of ships.	Tonnage.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	18	34,841	42,480	59,943	35,594	\$39,782.48	31,289
Chilean.....	2	3,072	5,224	6,543	3,921	3,840.00	257
Danish.....	1	4,223	5,338	6,650	4,247	5,278.75	7,511
Dutch.....	3	6,576	10,099	10,340	6,601	8,220.00	10,229
French.....	1	4,288	4,409	5,564	3,524	5,290.80	4,749
German.....	1	2,957	3,486	4,750	2,969	3,696.25	4,591
Norwegian.....	4	10,570	12,550	16,877	10,625	9,448.93	1,525
Peruvian.....	3	5,409	8,132	12,619	7,191	6,743.15	3,557
Swedish.....	1	1,338	1,431	2,241	1,595	1,672.50	2,650
United States.....	11	28,818	34,286	45,602	28,434	30,749.82	20,805
Totals, March, 1922.....	45	102,092	127,444	171,129	104,701	114,722.68	87,163
Totals, February, 1922.....	48	121,170	148,947	198,863	123,792	136,845.45	117,747
Totals, March, 1921.....	73	223,131	270,585	350,342	224,200	241,370.51	200,937

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships, and other noncargo-carrying vessels, are shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	4	13,128	\$9,556.25	2	9,694	\$6,979.68
Norwegian.....	1	2,924	2,922.50	2	10,094	7,267.68
United States.....	3	13,236	9,589.50	5	29,255	21,063.60
Totals.....	8	29,288	22,068.25	9	49,043	35,310.96

CLASSIFICATION OF NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Panama Canal free of tolls during the month of March, 1922. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Panama Canal; these are not included in the commercial traffic:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels:						
Collier.....	1	2,072	\$2,486.40	1	7,640	\$9,168.00
Tugs.....	2	1,750	875.00	1	1,000	500.00
Subchasers.....	2	122	61.00	2	122	61.00
Cruiser.....				1	3,200	1,600.00
Supply ship.....				1	6,500	3,250.00
United States Army:						
Mineplanter.....	1	1,208	604.00	1	1,208	604.00
Launches.....	2	4	3.00			
United States Government, Treasury Department				1	1,600	800.00
Commercial, for repairs.....	1	6,970	8,364.00			
Launches.....				2	5	3.75
Total, noncommercial.....	9	9,046	12,393.40	10	7,645	15,986.75
		3,080			13,630	

* Indicates displacement tonnage.

Cargo passing through the Panama Canal free of tolls:

Atlantic to Pacific.....	Tons.
Pacific to Atlantic.....	14,709
Total.....	1,015
	15,724

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of March, 1922, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving..... tons.	49,981	11,787	61,768
Local cargo shipped..... tons.	2,602	133	2,735
Transit cargo arriving..... tons.	998,549	991,385	1,989,934
Transit cargo clearing..... tons.	982,077	974,759	1,956,836
Cargo received for transshipment..... tons.	26,280	70	26,350
Cargo transhipped..... tons.	25,593		25,593
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	65	8	73
Panama Railroad vessels.....	4		4
United States Army vessels.....	2	1	3
Total vessels supplied with bunker coal.....	71	9	80
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons.	18,711	2,647	21,358
Panama Railroad vessels..... tons.	883		883
United States Army vessels..... tons.	253	32	285
Total coal supplied to vessels..... tons.	19,847	2,679	24,626

	Cristobal.	Balboa.	Total.
Coal issues, miscellaneous:			
Panama Canal departments..... tons	516	143	659
United States Army, excepting vessels..... tons	360		360
Individuals and companies..... tons	246		246
Total miscellaneous issues..... tons	1,122	143	1,265
Total issues from Panama Canal deposits:			
March, 1922..... tons	20,969	2,822	23,791
February, 1922..... tons	22,183	1,545	23,728
March, 1921..... tons	37,827	2,486	40,313
Coal on hand, April 1, 1922..... tons	131,336	24,539	155,875
Coal on hand, March 1, 1922..... tons	132,610	27,361	159,971
Coal received during March, 1922..... tons	19,695		19,695
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels..... tons	2,498	1,623	4,121
Coal on hand, April 1, 1922..... tons	59,010	15,186	74,196
Coal on hand, March 1, 1922..... tons	61,508	16,809	78,317
Fuel oil issues:			
Panama Canal departments..... bbls	5,409	12,391	17,800
Panama Railroad..... bbls	248		248
Army and Navy..... bbls	1,286		1,286
Total issues and sales..... bbls	6,943	12,391	19,334
Fuel oil on hand, April 1, 1922..... bbls	37,453	77,380	114,833
Fuel oil on hand, March 1, 1922..... bbls	44,396	89,771	134,167
Diesel oil issued during March, 1922..... bbls	20		20
Diesel oil on hand, April 1, 1922..... bbls	50,764	915	51,679
Diesel oil on hand, March 1, 1922..... bbls	50,784	915	51,699
Oil pumped for individuals and companies..... bbls	502,327	182,611	684,938
Miscellaneous transfers..... bbls		13,219	13,219
Total oil handled..... bbls	513,641	208,223	721,864
Admeasurement certificates:			
United States equivalent issued or made.....	21	4	25
Measured for Panama Canal net tonnage.....	15	8	23
United States equivalent or Panama Canal net tonnage corrected.....	31	14	45
Services of harbor equipment:			
Tugs, total operating hours.....	582	238	820
Launches, total operating hours.....	1,225	1,213	2,438
Vessels repaired at Panama Canal shops:			
Commercial.....	42	18	60
United States Government.....	5	7	12
Canal equipment.....	5	24	29
Vessels dry-docked:			
Commercial.....	7	4	11
United States Government.....	1	1	2
Canal equipment.....	2	3	5
Clearances issued.....	153	142	295
Bills of health issued.....	147	144	291

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal:

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
Ships entering.						
All vessels, including those transiting the Canal	299	1,592,875	999,705	244	1,281,552	824,360
Vessels entering port but not transiting the Canal	70	346,624	214,521	6	52,704	46,640
Vessels transiting Canal and handling passengers or cargo	57	242,791	146,875	46	189,021	113,785

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
Ships clearing.						
All vessels, including those transiting the Canal.....	288	1,544,897	968,708	243	1,252,144	789,733
Vessels entering port but not transiting the Canal.....	63	316,207	194,044	4	15,304	9,240
Vessels transiting Canal and handling passengers or cargo.....	55	235,626	142,445	47	203,145	122,200

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of March, 1922:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to—						
U. S. Government vessels.....	\$156.50	\$289.50	\$2,388.62		\$104.53	\$2,939.15
Panama Railroad vessels.....	82.50	543.56	4,510.80		628.59	5,765.45
Other commercial vessels.....	1,016.62	5,088.59	12,118.51		685.52	18,909.24
Totals, March, 1922.....	1,255.62	5,921.65	19,017.93		1,418.64	28,613.84
Totals, February, 1922.....	1,442.92	2,717.49	18,417.18		1,319.90	23,897.49
Totals, March, 1921.....	2,440.59	8,383.26	38,970.12	\$6,274.77	2,396.50	58,474.24
Sales at Balboa to—						
U. S. Government vessels.....	180.00	3,244.21	5,024.10	8.26	294.43	8,751.00
Other commercial vessels.....	511.51	2,153.42	6,462.57	7.88	1,736.40	10,871.78
Totals, March, 1922.....	691.51	5,397.63	11,486.67	16.14	2,030.83	19,622.78
Totals, February, 1922.....	360.86	3,148.27	12,233.83		1,041.83	16,784.79
Totals, March, 1921.....	1,644.90	10,243.14	30,710.56	910.67	1,967.35	45,476.62

MOVEMENT OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of March, 1922:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.....	1,014	898	1,912	13		13
From Pacific ports.....	149	79	228	268	29	297
Total disembarking.....	1,163	977	2,140	281	29	310
Embarking:						
For Atlantic ports.....	1,199	782	1,981	22	1	23
For Pacific ports.....	182	51	233	101	47	148
Total embarking.....	1,381	833	2,214	123	48	171
Remaining on board vessels:						
From Atlantic to Pacific ports.....	483	1,535	2,018	683	171	854
From Pacific to Atlantic ports.....	506	378	884	652	448	1,100
From Atlantic to Atlantic ports.....	1,825	85	1,910			
From Pacific to Pacific ports.....				24	67	91
Total remaining on board.....	2,814	1,998	4,812	1,359	686	2,045
Total passengers arriving.....	3,977	2,975	6,952	1,639	715	2,354
Total passengers departing.....	4,195	2,831	7,026	1,523	761	2,284

LOCK OPERATION.

The following tabulations give the number of lockages, vessels through the locks, and the consumption of water for lockages, for the month of March, 1922, as compared with that of the preceding month and of the corresponding month of last year.

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	93	130	223	10	2	12	235
Pedro Miguel.....	93	133	226	12	9	21	247
Miraflores.....	92	123	215	11	7	18	233
Total lockages, March, 1922.....	278	386	664	33	18	51	715
Total lockages, February, 1922.....	279	319	598	13	17	30	628
Total lockages, March, 1921.....	332	418	750	45	50	95	845

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	97	140	237	18	24	42	279
Pedro Miguel.....	98	140	238	26	21	47	285
Miraflores.....	98	140	238	26	22	48	286
Total vessels, March, 1922.....	293	420	713	70	67	137	850
Total vessels, February, 1922.....	304	353	657	52	54	106	763
Total vessels, March, 1921.....	354	449	803	109	111	220	1,023

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	19	15	15
Canal equipment.....	23	32	53
Total noncommercial.....	42	47	48

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
Lockages.....	<i>Cubic feet.</i> 887,670,000	<i>Cubic feet.</i> 813,910,000	<i>Cubic feet.</i> 700,408,000
Leakage.....	20,000,000	16,770,000	30,000,000
Maintenance.....		1,080,000	
Total consumption, March, 1922.....	907,670,000	831,680,000	730,408,000
Total consumption, February, 1922.....	854,610,000	822,000,000	722,960,000
Total consumption, March, 1921.....	990,900,000	919,450,000	908,450,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorological and hydrographic conditions over the Canal Zone and vicinity during the month of March, 1922, are shown in comparative form:

Rainfall.	March, 1922.	March, 1921.	March—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Total for month:					
Pacific Section.....	1.56	1.68	1.93	Trace	0.58
Central Section.....	.20	.26	4.28	.09	0.71
Atlantic Section.....	1.50	1.43	7.65	.58	1.88
Maximum recorded on any one day.....	2.15	2.24	10.86		
Gatun Lake watershed.....	.52	.60	5.97	.24	.78
Chagres River watershed above Alhajuela.....	1.14	1.07	4.58	.22	1.08
Maximum recorded for month at any one point.....	3.44	3.29	9.71		
Minimum recorded for month at any one point.....		.03			

* This figure represents the maximum 24-hour rainfall recorded on the Isthmus since American occupation. Recorded at Porto Bello on December 28-29, 1909.

NOTE—This report does not include Bocas del Toro.

Hydrography.	March, 1922.	March, 1921.	March—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	917	550	1,625	382	739
Maximum momentary discharge for the month.....	2,763	1,940	170,000		
Gatun Lake watershed total yield.....	1,257	897	1,792	594	1,147
Gatun Lake watershed net yield.....	190	—121	1,250	—385	299
Draft on Gatun Lake for lockages and power.....	2,012	2,394	2,394	1,148	1,714

* This figure represents the maximum momentary discharge on record. Occurred on December 26, 1909.

* Not including March, 1914.

SEISMOLOGY.

A slight tremor from a distant disturbance was recorded at Balboa Heights on the evening of the 27th. The epicenter of the disturbance was distant about 2,100 miles and probably in a northerly direction.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., are shown in the following tabulation:

	March, 1922.	February, 1922.	March, 1921.
Gross output, KWH:			
Gatun hydroelectric station.....	4,728,100	4,241,600	6,328,600
Miraflores steam plant.....	400	10,600	12,010
Combined gross output.....	4,728,500	4,252,200	6,340,610
Water consumption..... cubic feet..	3,687,402,000	3,339,809,600	4,559,456,500
Oil consumption..... barrels..	1,911	1,810	2,162
Power distributed to consumers..... KWH..	3,983,218	3,631,222	5,323,254
Loss of power in plant auxiliaries, transmission and transformation..... KWH..	745,282	620,978	1,017,356
Per cent of loss of power to gross output.....	15.76	14.60	16.04

Miscellaneous electrical repairs and installations of electrical equipment were made on 21 vessels during the month. There were 274 work orders issued for work to be performed by the Electrical Division during the month, as compared with 240 for the month of February, 1922.

SHOP, FOUNDRY, AND DRY-DOCK WORK.

The output of the Mechanical Division in patterns and castings for the month of March, 1922, as compared with the preceding month, was as follows:

	March, 1922.			February, 1922.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	2	135	7,958	7	140	4,482
Steel.....	3	51	21,716	2	140	20,045
Brass.....	2	129	2,549	3	254	3,092

During the month, miscellaneous repairs were made on 52 vessels at Cristobal and 49 at the Balboa shops. Of the foregoing vessels, 10 were placed in dry dock at Cristobal and 8 at Balboa.

On the *S. S. Garfield*, which was towed up from Colombia after being aground there for some time, the boiler was opened up, cleaned, and scaled. The main refrigerator and auxiliary condensers were opened up, cleaned, and repaired. All tanks were tested and bottom was repaired as directed. The fresh water main circulating engine windlass and capstan were overhauled and adjusted. Other miscellaneous repairs were made, caused by the grounding of the vessel.

The *S. S. Arizonan*, of the Hawaiian-American Line, was docked in a partly loaded condition for repairs to propeller. This steamer made a passage of the Canal and went several hundred miles into the Caribbean when a propeller blade broke off. It was necessary for the vessel to put back for repairs. The Panama Canal dock at Cristobal is too small for the vessel and she had to be brought to Balboa. Her experience is a good example of the advantage to shipping of the rule recently promulgated, allowing vessels to transit the Canal from the Atlantic to Balboa solely for docking purpose without charges other than for lockage and pilotage. The imposition of Canal tolls, which the vessel would have suffered except for the ruling,

would have worked a particular hardship in her case, as the vessel and cargo, consisting of 12,000 tons general cargo, had already paid full tolls for the original passage.

The Chilean battleship *Almirante Latorre* was docked, cleaned, and painted. This vessel was docked at Balboa about 14 months ago and had not been docked in the interim. The condition of the Navy standard bottom paint manufactured at Balboa and applied on her previous visit was very gratifying considering her long stay out of dry dock. This vessel is one of the largest battleships afloat and is the largest ship docked at Balboa with 2 exceptions. Not only is the Balboa dry dock large enough to take much larger vessels, but her docking demonstrates that the supply of blocking and other dry-dock accessories kept constantly on hand at the Balboa dock and the docking personnel are adequate for any conceivable demand.

Work was begun on the conversion of the Marine Division wrecking tug *Favorite* into an oil burner.

Frames and plating were put under way for widening the dredges *Gamboa* and *Paraiso* to approximately the width of the *Cascadas*. This widening of the hull is being carried out in order to do away with the danger of overturning to which these dredges are liable at the present under certain adverse conditions. The extension of 5 feet to the hull on each side will be made by constructing the same in the shop as a sort of box, open on one side, after which the dredge will be put into dry dock, the extension lowered into the dock, pushed into place, and connected with the hull.

Conditions in the Balboa shops so far as work ahead is concerned showed a slight general improvement.

DREDGING DIVISION.

Cucaracha, Culebra, and Barge Repair slides have shown no movement during the month and there was no interference with Canal traffic. The total excavation for the month of March, 1922, including earth and rock, was 254,750 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment
	Earth.	Rock.			
50,950	20,350	30,600	Maintenance.....	<i>Gaillard Cut, West Culebra.</i> 1757-00 to 1805-00 W.....	<i>Paraiso.</i>
41,300	16,500	24,800	Maintenance.....	<i>Gaillard Cut, East Culebra.</i> 1778-00 to 1805-00 E.....	<i>Paraiso.</i>
4,500	3,150	1,350	Maintenance.....	<i>West Barge Repair.</i> 1747-00 to 1745-00 W.....	<i>Paraiso.</i>
38,950	15,000	23,950	Maintenance.....	<i>Pacific Entrance.</i> 2160-00 to 2200-00 W.....	<i>Cascadas.</i>
4,650		4,650	Construction.....	2160-00 to 2200-00 W.....	<i>Cascadas.</i>
39,600	39,600		Maintenance.....	2064-50 to 2075-00 W.....	<i>No. 84.</i>
74,800	74,800		Maintenance.....	2291-80 to 2314-00 E.....	<i>No. 84.</i>
254,750	169,400	85,350			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	96,750
Dumped on flats west of Canal.....	74,800
Dumped on flats east of Canal.....	39,600
Dumped at sea.....	43,600
Total.....	254,750

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	March, 1922.	February, 1922.	March, 1921.
Pumping stations.....	686,383,250	609,793,750	834,072,750
Filtration plants.....	402,585,000	358,774,000	511,274,000
Water consumed by Panama City.....	82,952,000	75,265,000	102,527,000
Water consumed by Colon.....	58,020,500	53,528,000	58,570,500
Sales of water to vessels.....	9,470,092	9,597,295	11,923,740

Construction work, as itemized below, was under progress during the month of March, 1922, with completion on February 28 and March 31 as shown:

	Per cent completed.	
	Feb. 28.	March 31.
Fill, France Field.....	99.5	99.5
Grading of Silver City, Mount Hope.....	98	100
Construction of landing field at Naval Air Station, Coco Solo.....	97	98
Sea wall and dry fill, Coco Solo.....	75	90
Construction of new concrete sea wall, new Santo Tomas Hospital.....	98.5	100
Extension of roads, new Santo Tomas Hospital.....	60	61
Foundation of statue of Balboa.....	79	79
Extension of sea wall, new Santo Tomas Hospital.....	97	99
Installation of electric duct line, new Santo Tomas Hospital.....	65	65

OCCUPANTS OF QUARTERS.

The occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	March 31, 1922.			Total occupants.		
	Men.	Women.	Children.	March, 1922.	February, 1922.	March, 1921.
Americans.....	2,346	1,957	2,224	6,527	6,529	8,290
Europeans.....	104	41	91	236	229	245
West Indians.....	4,060	2,489	5,571	12,120	12,128	11,666
Totals, March, 1922.....	6,510	4,487	7,886	18,883		
Totals, February, 1922.....	6,625	4,406	7,855		18,886	
Totals, March, 1921.....	8,452	4,581	7,168			20,201

WORKING FORCE.

The following tabulation shows the number of gold and silver employees as of March 15, 1922, by departments, together with a comparison of the working force for the preceding month and that of March, 1921.

	Employees as of March 15, 1922.		Total employees.		
	Gold.	Silver.	March, 1922.	February, 1922.	March, 1921.
Operation and Maintenance:					
Office.....	28	56	84	84	73
Electrical.....	146	165	311	302	478
Municipal Engineering.....	74	526	600	621	886
Lock Operation.....	186	663	849	853	893
Dredging.....	134	623	757	749	1,271
Mechanical.....	333	505	838	913	2,253
Marine.....	157	354	511	525	780
Fortifications.....	44	297	341	301	318
Totals.....	1,102	3,189	4,291	4,353	6,952
Supply Department:					
Transportation.....	31	142	173	177	
Quartermaster.....	131	798	929	926	2,214
Subsistence.....	15	211	226	224	444
Commissary.....	177	773	950	957	1,752
Cattle Industry—Plantations.....	10	346	356	304	428
Hotel Washington.....	8	86	94	93	111
Totals.....	372	2,356	2,728	2,681	4,949
Accounting Department.....	174	7	181	184	252
Health Department.....	218	743	961	954	1,171
Executive Department.....	498	241	739	737	828
Totals.....	890	991	1,881	1,875	2,251
Panama Railroad:					
Superintendent.....	47	250	297	299	558
Transportation.....	69	106	175	177	254

* This includes 514 employees of the former Building Division.

	Employees as of March 15, 1922.		Total employees.		
	Gold.	Silver.	March, 1922.	February, 1922.	March, 1921.
Panama Railroad—Continued.					
Receiving and Forwarding Agency.....	62	549	611	852	698
Coaling Stations.....	86	499	585	558	1,020
Totals.....	264	1,404	1,668	1,886	2,530
Grand totals, March, 1922.....	2,628	7,940	10,568		
Grand totals, February, 1922.....	2,640	8,155		10,795	
Grand totals, March, 1921.....	3,991	12,691			16,682
Grand totals, March, 1920.....	4,575	17,660	22,235		

* March, 1920.

The present total force is 47.5 per cent of the total force employed 2 years ago.

SCHOOLS.

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone, for the month of March, 1922:

	White.	Colored.	Total.
Gross enrollment.....	2,030	1,795	3,825
Net enrollment.....	1,864	1,747	3,611
Average daily attendance.....	1,537.6	1,327.1	2,864.7
Pupils neither absent nor tardy.....	875	514	1,389
Number of cases of tardiness.....	295	58	353
Number of teachers.....	77	32	109

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, are shown below in comparative form:

	March, 1922.	February, 1922.	March, 1921.
Material received on United States requisitions, chargeable as follows:			
Operation and Maintenance.....	\$92,935.36	\$113,754.54	\$708,839.37
Construction and equipment.....			9,257.33
Miscellaneous.....	1,702.52	820.74	15,277.66
Totals.....	94,637.88	114,575.28	733,374.36
Cash sales on the Isthmus:			
Stock.....	30,056.34	28,924.32	36,911.32
Fuel oil (including sales to ships).....	67.62	106.56	2,032.80
Scrap.....	902.88	685.83	1,342.90
Obsolete and second-hand material.....	4,156.89	1,809.72	1,014.87
Totals.....	35,183.73	31,526.43	41,301.89
Sales to steamships from storehouses:			
Miscellaneous stock items.....	9,240.67	9,078.06	17,759.25
Fuel oil.....	67.62	47.64	2,032.80
Totals.....	9,308.29	9,125.70	19,792.05

Respectfully,

JAY J. MORROW,

Governor.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal Washington."

Increasing Shipments from the Pacific Coast.

Lumber shipments from the Pacific coast of the United States through the Panama Canal were heavier in March, 1922, than in any previous month for which accurate statistics are available. They aggregated 67,064 tons.

A comparison of the tonnage of certain typical Pacific coast products shipped through the Canal during the first quarter of 1921 and the first quarter of 1922 indicates how rapidly the shippers of this section are turning to the water route:

Commodity.	First quarter, 1921.	First quarter, 1922.
	<i>Tons.</i>	<i>Tons.</i>
Fresh fruit.....	1,936	12,387
Canned fruit.....	7,499	35,177
Dried fruit.....	1,462	13,740
Canned fish.....	7,623	28,106
Lumber.....	96,673	182,421
Lubricating oil.....		18,497
Wool.....	858	15,280

There were heavy shipments of wheat and barley during the past year, but as these products are shipped for the most part during the late summer and fall a comparison of shipments during the first quarter of the year would be of little value.

Diminished Traffic and Tolls.

During the first half of the current fiscal year, July to December, 1921, the aggregate net tonnage of vessels using the Panama Canal and the tolls collected were almost exactly the same as during the corresponding half of the previous fiscal year, the difference in each case being less than half of one per cent. But the third quarter of the fiscal year (January to March, inclusive, 1922) shows a marked decline of traffic and revenue, as follows:

Period.	No. of ships.	P. C. net tons.	Cargo tons.	Tolls.
January to March, 1921.....	775	3,123,979	3,314,520	\$3,118,806.51
January to March, 1922.....	656	2,708,862	2,605,461	2,670,760.49
Decrease.....	119	415,117	709,059	448,046.02
Percentage of decrease.....	15.4	13.3	21.4	14.4

Except through abnormal growth in the remaining months, the business of the complete fiscal year 1922, ending June 30, will be materially less than in the fiscal year 1921, when 2,892 ships made the transit. It will apparently be about the same as for the calendar year 1921, in which the commercial vessels using the Canal numbered 2,783.

Correction.—Agency for United States Lines.

A notice, published in THE PANAMA CANAL RECORD of March 22, stated that the Panama Railroad Company had accepted the agency of the United States Mail Steamship Company, Inc., for the sale of passage tickets over the line of that company between the United States and Europe.

Advice has been received from the United States Lines that though the tickets forwarded bore the name of United States Mail Steamship Company, that company is in bankruptcy, and its ships were turned back to the Shipping Board, which set up a new unit, known as the United States Lines, and it is the United States Lines for which the Panama Railroad Company is agent.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, March, 1922.

From—	NORTH AMERICA.										EUROPE.										Grand totals.	Per cent of total cargo.	
	UNITED STATES.					NORTH AMERICA.					EUROPE.												
	North At- lantic ports		South At- lantic ports	Gulf ports.	Total, United States.	West Indies.	Cristobal, C. Z.	Canada.	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Italy.	Spain.	Azores and West Indies.	Europe.	Total, Europe.			East coast of South America.
SOUTH AMERICA:																							
Chile	6,841		2,650	9,491	303	4		9,798	7,045	2,818	9	6,706	5,295					13,470	35,340	45,138	11.93		
Colombia	1,989			1,989		219		2,208										136	136	2,402	0.62		
Ecuador	2,505			2,505		603		3,108				200	84	78				434	796	3,903	1.03		
Peru	9,157			9,157		2,876		12,033				10	39					295	7,849	20,440	5.41		
West coast of South America*	4,211		1,778	5,989		193		6,182												6,182	1.63		
Total, South America	24,703		4,428	29,131	303	3,895		33,329	12,448	3,748	1,267	6,916	5,418	78				14,246	44,121	78,066	20.62		
NORTH AMERICA:																							
West coast of United States	120,208	1,200	8,008	129,416	660	257		130,333	48,590			3,131	2,228					2,727	56,676	187,009	49.46		
West coast of Canada	10,050	1,002		11,052				11,052	18,314			1,120	336						19,770	30,822	8.15		
West coast of Central America	3,815			3,815		7,597		11,412		100		1,879	1,487						540	15,418	4.08		
Total, North America	134,073	2,202	8,008	144,283	660	7,854		152,797	66,904	100		6,130	4,051					3,267	80,452	233,249	61.69		
ASIA:																							
China	6,943			6,943				6,943												6,943	1.83		
Japan	4,809			4,809				4,809												4,809	1.27		
Philippines	3,856		1,000	4,856				4,856												4,856	1.28		
Far East*	2,305			2,305				2,305												2,305	0.61		
Total, Asia	17,913		1,000	18,913				18,913												18,913	5.00		
AUSTRALASIA:																							
Australia	1,784			1,784				1,784	5,014										5,014	6,798	1.79		
New Zealand	24			24			580	604	28,350										28,350	28,954	7.66		
Australasia*												496	11,350						11,846	11,846	3.13		
Total, Australasia	1,808			1,808			580	2,388	33,364			496	11,350						45,210	47,598	12.59		
Hawaii	311			311				311												311	0.08		
Grand totals	178,808	2,202	13,436	194,446	963	11,749	580	207,738	112,716	3,848	1,267	13,542	20,819	78				17,513	159,783	616,378	137		
Per cent of total cargo:																							
March, 1922	47.29	0.58	3.55	51.42	0.26	3.11	0.15	54.94	29.81	1.01	0.35	3.58	5.50	0.02					4.63	44.90	0.16	100.0	
February, 1922	42.70	0.20	0.70	43.60	0.50	2.40		46.60	39.70	0.40	3.30	2.70	3.80	1.00	1.30	0.10			1.00	53.30	1.00		
March, 1921	25.90	6.20	2.10	34.20	0.20	2.50	1.20	38.10	30.40	5.40	0.20	1.60	8.20	5.70	0.20	0.30	6.10		3.70	55.89			

* Figures represent tons of 2,240 pounds.

* General cargo not routed so as to allow segregation between definite ports.

* For orders.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, March, 1922.

THE PANAMA CANAL RECORD

From—	SOUTH AMERICA.						NORTH AMERICA.						ASIA.						AUSTRALASIA.				Grand totals.	Per cent of total cargo.
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America.	Total South America.	West coast of United States.	Canada.	West coast of Central America.	Balboa, C. Z.	Mexico.	Total, North America.	China.	Japan.	Philippines.	Far East.	Total, Asia.	Australia.	New Zealand.	Australasia.	Total Australasia.	Hawaii.		
UNITED STATES.																								
North Atlantic ports	4,479	256	2,386	5,226		12,347	106,955	5,000			168	112,123	34,032	103,455	1,293	3,098	141,808	16,610	12,420		29,030	1,266	296,574	50.96
South Atlantic ports	11,403					11,403	9,231				33	9,264	2,963	4,826	150	548	8,482						29,149	5.01
Gulf ports.	799			1,330		2,129	31,864		8,000			39,864	9,222	31,640			40,862						82,855	14.24
Total, United States.	16,881	256	2,386	6,556		25,879	148,050	5,000	8,000		201	161,251	46,217	139,921	1,443	3,571	191,152	16,610	12,420		29,030	1,266	408,578	70.21
East coast of Mexico.						19,100					3,800	3,800		8,682			8,682						31,582	5.43
Atl. terminus, Cristobal, C. Z.	1,436	52	1,580	373		3,441	1,826		1,481		641	3,948		14,159			19,150						7,389	1.27
West Indies.												11,567	5,000										30,726	5.28
East coast of Canada.																					750		750	0.13
Total, North America.	37,217	308	3,966	6,929		48,420	149,876	10,567	1,481	8,000	4,642	180,566	51,217	162,762	1,443	3,571	218,983	17,360	12,420		29,780	1,266	479,025	82.32
ENROPE:																								
Belgium.	509					800	10,183	600				10,783											11,583	1.99
British Isles.	4,637			300	1,609	6,246	7,669	11,989				19,658				20	20	1,784	83,721		35,505	4,833	66,262	11.39
France.			812			812	4,862	5,446				10,308											11,120	1.93
Germany.	5,444	2	170	537		6,153	1,424		1,486	90		3,000											9,153	1.57
Holland.				894		894	1,419	6				1,425											2,319	0.38
Italy.	1,077		25	1	297	1,400	56					56											1,456	0.25
Norway.							500			180		680											680	0.11
Total Europe.	11,658	2	1,007	1,732	1,906	16,305	26,113	18,041	1,486	270		45,910				20	20	1,784	83,721		35,505	4,833	102,573	17.62
East coast of South America.	279					279	75					75											354	0.06
Grand totals.	48,875	589	4,973	8,661	1,906	65,004	176,064	34,608	2,967	8,270	4,642	226,551	51,217	162,762	1,443	3,571	219,013	19,144	46,141		65,285	6,099	581,952	100.0
Per cent of total cargo:																								
March, 1922.	8.40	0.10	0.85	1.49	0.33	11.17	30.26	5.94	0.51	1.42	0.80	38.93	8.80	27.97	0.25	0.62	37.64	3.29	7.93		11.22	1.04	100.00	
February, 1922.	11.20	0.30	2.70	2.60	0.60	17.60	29.40	1.60	0.60	1.50		33.20	4.50	28.20	1.20	0.80	34.80	3.60	10.80		14.40			
March, 1921.	16.40	0.10	0.60	1.50	4.80	23.40	18.00	4.40	0.40	6.30	1.50	30.60	5.90	8.40	1.30	6.70	23.30	5.80	11.40	5.5	22.70			

* General cargo not routed so as to allow segregation between definite ports.

† Figures represent tons of 2,240 pounds.

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, April 22, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.	
Kentuckian.	15	21	00	16	6	35	16	15	26	American	American-Hawaiian Line.	414.5	53	7	23	Boston.	General.	3,300	7,049	4,941
Nordkap.	16	6	57	16	7	25	16	16	20	Danish	Peter Brown.	350.1	44	0	23	Norfolk.	Coal.	4,517	3,755	2,712
Bowes Castle.	16	10	18	16	10	45	16	17	34	British	James Chambers & Co.	418.5	56	1	27	New York.	Yokohama.	7,885	6,675	4,698
Benjamin.	16	10	45	16	11	05	16	18	24	American	Standard Oil Co.	411.6	53	2	17	New York.	Ballast.	6,177	4,244	
Brewster.	16	1	22	16	11	45	16	19	15	British	Ellerman Lines, Ltd.	391.3	54	0	27	New York.	Yokohama.	7,133	5,418	
City of Glasgow.	15	6	22	16	13	01	16	20	06	Dutch	Royal Netherlands W. I. Mail.	369.0	50	0	19	Hamburg.	General.	2,340	5,862	4,393
Delft.	15	6	22	16	7	28	16	15	25	American	United States Navy.	485.0	58	0	22	Cristobal.	General.	1,985	9,386	6,561
Societa.	16	13	15	17	6	10	17	12	37	British	Pacific Steam Navigation Co.	265.9	39	9	11	Liverpool.	Valparaiso.	1,000	1,936	1,304
Orla.	16	7	15	17	8	22	17	16	37	American	Atlantic Refining Co.	265.9	39	9	11	Philadelphia.	General.	1,000	1,936	1,304
R. D. Leonard.	16	7	15	17	8	22	17	16	37	American	Atlantic Refining Co.	265.9	39	9	11	Philadelphia.	Gasoline.	1,000	1,936	1,304
Gen. O. H. Frost.	14	12	35	17	11	45	17	17	55	American	Panama Railroad Steamship Line.	356.4	45	3	17	New York.	General.	641	4,503	2,764
Killierig.	18	3	56	18	6	23	18	12	14	British	Lindsay, Swann Hunter.	172.0	30	0	13	Kingston.	Ballast.	15	575	152
Laura C. Hall.	16	18	50	18	6	10	18	15	40	British	Pacific Metals Corporation.	81.0	26	0	9	Cristobal.	General.	132	132	72
West Katian.	17	22	10	18	6	50	18	15	45	American	Swayne & Hoyt (S. B.).	410.0	54	0	25	Para.	General.	6,748	6,573	4,901
Rhodophis.	18	7	29	18	8	00	18	16	48	German	Kosmos Line.	435.1	53	1	25	Hamburg.	General.	4,380	7,525	5,553
Jamaica.	16	9	17	18	9	22	18	17	32	British	Pacific Steam Navigation Co.	220.0	34	0	15	Tumaco.	General.	799	1,187	622
Thorgerd.	18	9	30	18	10	15	18	17	47	Norwegian.	B. Bjornstad & Co.	251.0	43	0	13	Pto. Colombia.	General, salt.	3,646	5,926	4,257
Welsh Prince.	18	13	57	19	6	20	19	14	17	British.	Furness Withy & Co.	410.0	52	0	24	Barbados.	Ballast.	3,646	5,926	4,257
Santa Elisa.	18	15	57	19	7	26	19	14	17	American.	Grace Line.	360.3	51	7	23	Baltimore.	General.	2,462	5,957	4,325
Astronomer.	18	8	38	19	8	04	19	16	35	British.	Harrison Line.	422.0	58	0	21	New York.	General.	3,400	8,898	6,334
Steel Worker.	18	21	15	19	8	50	19	17	30	British.	United States Steel Products Co.	424.2	56	0	26	Glasgow.	General.	3,400	8,898	6,334
Aysen.	16	16	10	19	10	11	19	18	34	Chilean.	Chilean Line.	379.6	44	3	22	Baltimore.	General.	8,400	7,611	5,497
Grainfos.	19	6	03	19	11	46	19	18	38	Norwegian.	Thor Thorsen.	244.2	39	1	13	Cristobal.	General.	940	4,535	3,068
Storvikten.	19	11	42	19	12	00	19	19	32	Norwegian.	Haakon Wollmen.	380.0	53	0	24	Port Arthur.	General.	6,242	5,330	3,568
Baltimore Maru.	19	2	55	19	12	45	19	20	26	Japanese.	Kawasaki Kisen Kaisha.	405.0	53	0	28	Galveston.	Case oil.	7,580	7,025	5,055
City of Adelaide.	19	6	38	19	13	45	19	21	31	British.	Ellerman Lines, Ltd.	433.0	57	0	26	New York.	General.	7,000	8,547	6,646
Rio Gaton.	18	13	52	19	6	10	19	14	47	American.	A. R. Eckhardt.	390.0	54	0	23	Cristobal.	General (Navy).	5,317	5,956	4,460
Vega.	19	13	52	20	6	10	20	15	20	American.	United States Navy.	380.0	54	0	23	Hampden Rds.	General, steel.	7,221	5,956	4,460
Tokufuku Maru.	19	16	37	20	7	42	20	16	15	Japanese.	Kokusa Kisen Kaisha.	385.0	51	0	27	New York.	General.	5,317	5,956	4,460
Waller A.	19	16	37	20	7	42	20	16	15	Japanese.	Kokusa Kisen Kaisha.	385.0	51	0	27	New York.	General.	5,317	5,956	4,460
Luckenbach.	19	20	40	20	8	48	20	17	09	American.	Luckenbach Line.	446.5	56	1	28	New York.	General.	8,400	8,785	6,507
Dechra.	20	7	00	20	10	07	20	17	52	American.	Barber Line.	376.0	51	0	23	New York.	General.	6,033	5,158	3,813
Johanne.	20	7	00	20	10	07	20	17	52	American.	Barber Line.	376.0	51	0	23	New York.	General.	6,033	5,158	3,813
Dybbad.	21	6	26	21	6	45	21	15	05	Norwegian.	Olaf Jorvig.	314.0	46	0	17	Norfolk.	Coal.	2,182	3,051	2,113

¹ Launch.

² Motor schooner.

³ Tug.

⁴ Transport.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending April 22, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Advance.....	Panama Railroad Steamship Line.		April 16.		126
Gen. O. H. Ernst	Panama Railroad Steamship Line.		April 17.		76
Orita.....	Pacific Steam Navigation Co.	April 16.	April 17.	5	177
R. D. Leonard.	Atlantic Refining Co.	April 16.	April 17.	863	(¹)
Atenas.....	United Fruit Co.	April 16.	April 17.	(¹)	388
Ares.....	Royal Netherlands W. I. Mail.	April 16.	April 18.	40½	872
Jamaica.....	Pacific Steam Navigation Co.	April 16.	April 18.	18	231½
Laura C. Hall.	Pacific Metals Corp.	April 16.	April 18.	39	15
Aysen.....	Chilean Line.	April 16.	April 19.	176	944
Amassia.....	Hamburg-American Line.	April 17.	April 17.	90	(¹)
Colon.....	Panama Railroad Steamship Line.		April 19.		2,481
Heredia.....	United Fruit Co.	April 17.	April 20.	534	44
Cristobal.....	Panama Railroad Steamship Line.	April 18.	April 20.	9,390	(¹)
Ulua.....	United Fruit Co.	April 18.	April 19.	239	90½
Granfos.....	Caribbean Steamship Line.	April 19.	April 19.	82	(¹)
Sixacola.....	United Fruit Co.	April 19.	April 19.	6	26
Carrillo.....	United Fruit Co.	April 19.	April 20.	168	224
Atenas.....	United Fruit Co.	April 20.	April 20.	(¹)	4
Orange Nassau.	Royal Netherlands W. I. Mail.	April 20.	April 20.	33	½
Manavi.....	Pacific Steam Navigation Co.	April 20.		134	
Ebro.....	Pacific Steam Navigation Co.	April 21.	April 22.	184	(¹)
Anna.....	Caribbean Steamship Line.	April 21.	April 22.	118½	(¹)
Advance.....	Panama Railroad Steamship Line.	April 21.		686	
Archer.....	Barber Line.	April 21.	April 21.	½	(¹)
Achilles.....	Panama Railroad Steamship Line.	April 22.		12,019	
Santa Ana.....	Pacific Mail Steamship Co.	April 22.		3,144	
Honduras.....	French Line.	April 22.		9	
San Bruno.....	United Fruit Co.	April 22.	April 22.	20	38

¹ No cargo discharged.

² No cargo laded.

³ Packages.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending April 22, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Aysen.....	South American Steamship Line.	April 16.	April 16.	163	
Laura C. Hall.	Pacific Metals Transportation Co.	April 16.	April 16.	11	
Delft.....	Royal Netherlands W. I. Mail.	April 16.	April 16.	159	
Chateau Thierry	United States Army.	April 17.	April 17.	4	
R. D. Leonard.	Atlantic Refining Co.	April 17.	April 18.	397	
Jamaica.....	Pacific Steam Navigation Co.	April 18.	April 18.		10
Laura C. Hall.	Pacific Metals Transportation Co.	April 18.	April 18.		56
Santa Elisa.....	Grace Line.	April 19.	April 19.	10	
Archer.....	United States Shipping Board.	April 20.	April 21.	2	
Santa Ana.....	Pacific Mail Steamship Co.	April 21.	April 22.	46	

⁴Transport.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the two weeks ended April 25:

Steamship *Wolsum*, dry-dock ship for repairing damage caused by collision with steamship *West Himrod*, in Colon Harbor; renew about 5 buckled or split underwater plates; fair about 10 bent pates, and fair bent frames; remove, fair, and replace twisted plates and railings on forecastle head; renew or fair damaged plates at bulkheads of storeroom and paint locker, forward; repair anchor windlasses; cable ship *Guardian*, dry-dock ship for cleaning and painting; stage and clean; paint bottom 1 coat of anticorrosive and 1 coat of antifouling; the following repairs to machinery: rebore refrigerating compressor cylinder; refit valve; overhaul all boiler blow-down valves; renew zinc plates on ship's stem and overhaul all sea valves; renew wood friction blocks on brake bands of cable drums; scale lower bunker in No. 3 ballast tank; the following repairs for deck department: renew facing irons for buoy skids; repair cowl; fair dents, and renew defective plates in buoys; fit struts to forward davit; overhaul galley stove and manufacture 12 serving mallets; dredge *Cascadas*, dry-dock for cleaning, painting, and hull repairs; stage and clean, and paint bottom 2 coats of anticorrosive and 1 coat of antifouling; test tanks and renew leaky rivets

in hull and spud wells; reinforce spud housing; make general repairs to all machinery, including main engines; motor schooner *Laura C. Hall*, furnish and fit up air hose for blowing out vessel's fuel oil tank with compressed air; steamship *W. J. Hanna*, dry-dock ship for repairs on account of broken propeller shaft; cleaning and painting; stage and clean; paint bottom 1 coat of anticorrosive and 1 coat of antifouling; paint boot topping; remove broken propeller shaft and broken tail shaft; rewood and rebore stern tube; install new propeller shaft and new tail shaft furnished by ship; ream holes and renew coupling bolts between new and old shafting; alter 3 sections of copper steam piping to deck machinery; renew oil piping to crank pin on connecting rod of high power, intermediate power, and low power engines; make minor repairs to 2 valves and 1 section of heating pipe for deck house; make tight 3 staybolt nuts; renew 6 feet of internal feed pipe for boilers; refit main check valves and internal feed pipe where connected to the internal boiler head, 3 boilers; make minor repairs to deck fittings; launch *Augusta Victoria*, remove crank shaft; turn crank pin true; remetal 2 crank-pin brasses and 1 main bearing; line up engine with tail shaft and dismantle 4 hot balls, cylinder heads, and pistons; clean out engine and assemble.

PREVIOUSLY REPORTED.

Tug *Favorite*, convert from coal-burner to oil burner.

The following vessels were at the Cristobal shops for repairs during the week ended April 25:

Steamships *Carrillo*, machine blow-down valve; *Manavi*, open and test main condenser; renew leaky tubes; clean and paint water spaces; supply and fit new impeller shaft for main circulating pump; fit neck gland bushings; true up, re-bed, and make steam-tight ash hoist trunnions; test starboard boiler; repair chairs and door locks; renew angle sockets for gangway door; make winch chute; renew cover plate for bulkhead lamp room; refit fresh water pump and renew pump suction pipe; repair and test 2 weighing machines; repair gangway platform; manufacture eyebolt for funnel guy; *Cauca*, make tarpaulin; calk well deck; electric weld hawse pipe; repairs to engine; *Achilles*, clean all boilers; punch tubes; clean back connections and furnaces; paint boiler fronts; U. S. S. *O-11*, *O-12*, *O-13*, *O-14*, *O-15*, and *O-16*, manufacture blank bolts, main bearing studs, and pump gingers.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individual and companies including the 25 per cent surcharge, effective April 15, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.25
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Rakum, Navy, spun.....	Lb.	.11
Rakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.50
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.56
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.15
Paint, zinc, white, in oil.....	Lb.	.16
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Yarn, aah.....	Lb.	.03
Yarn, cotton, colored.....	Lb.	.14
Yarn, cotton, white.....	Lb.	.15

Official Circular.

Rates of Pay for Silver Employees.

THE PANAMA CANAL,
EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., April 19, 1922.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective at once and until the next readjustment of silver rates of pay on July 1, 1922, no increases of pay will be approved except where there is a change of work justifying higher pay under the rules. Meritorious cases deserving of promotion will be taken up after July 1.

JAY J. MORROW,
Governor.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa.

For coal in large quantities as specified below, taken from alongside coaling plants:

- (a) To vessels taking 1,200 tons or over;
- (b) To vessels taking between 825 and 1,200 tons and bunkering full;
- (c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

- (d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

- (f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

- (h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

Typewriters For Sale.

The Supply Department has on sale a limited number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storeskeeper, Supply Department, Administration Building, Balboa Heights.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 483.

PORT OF CRISTOBAL.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	Line.	Date.	Vessel.	Line.
April 16	Atenas	United Fruit Co.	April 16	Advance	Panama Railroad Steamship Line
April 17	Anassia	Hamburg-American Line	April 17	Bushnell	United States Navy
April 17	Heredia	United Fruit Co.	April 17	Amassia	Hamburg-American Line
April 18	Uta	United Fruit Co.	April 17	Arenas	United Fruit Co.
April 18	Cristobal	Panama Railroad Steamship Line	April 17	Colon	Panama Railroad Steamship Line
April 19	Carrillo	United Fruit Co.	April 19	Ulus	United Fruit Co.
April 19	Sicaola	United Fruit Co.	April 19	Sicaola	United Fruit Co.
April 19	Arenas	United Fruit Co.	April 19	Heredia	United Fruit Co.
April 20	Orange Nassau	Royal Netherlands W. I. Mail	April 20	Carrillo	United Fruit Co.
April 20	Advance	Panama Railroad Steamship Line	April 20	Cristobal	Panama Railroad Steamship Line
April 21	Sadue	United Fruit Co.	April 20	Arenas	United Fruit Co.
April 22	Achilles*	Panama Railroad Steamship Line	April 20	Orange Nassau	Royal Netherlands W. I. Mail
			April 22	San Bruno	United Fruit Co.

PORT OF BALBOA.

Date.	Vessel.	Line.	Date.	Vessel.	Line.
April 19	Nordamerica	Norden Steamship Line	April 17	Guardian	All-America Cables, Inc.
			April 20	Nordamerica	Norden Steamship Line

*Other than ships passing through the Canal.

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THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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The Panama Canal, Washington, D. C.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., May 3, 1922.

No. 38.

Canal Traffic in April.

A total of 230 ocean-going commercial vessels transited the Canal during the month of April, the tolls on which amounted to \$953,256.11, as compared with \$956,726.76 tolls for 234 vessels last month, and \$927,977.09 tolls for 227 vessels in the month of April last year. While the tolls are slightly less than for the preceding month, the cargo tonnage was greater, the total for April being approximately 1,045,000 tons, as compared with 960,089 cargo tons for the preceding month, and 907,613 cargo tons for April, 1921. This is the first time the cargo tonnage has exceeded 1,000,000 tons since March, 1921.

In addition to the above commercial traffic, 9 small nonseagoing launches transited the Canal during the month, on which tolls of \$38.75 were paid, and 14 vessels passed through the Canal free of tolls. Of the vessels transiting the Canal free of tolls, 12 were noncommercial vessels of the United States Government, and 2 were commercial vessels which were passed through the Canal without charge in order to have repairs made at the Balboa dry dock.

The "Derblay" Assisted by the "Killerig."

The tug *Killerig*, operated by Lindsay, Swan & Hunter, of Kingston, passed through the Canal on April 18, bound from Kingston to Manta Bay, Ecuador, to assist the American steamer *Derblay*, which was aground there. After the floating of the ship, the *Derblay* continued her voyage and the *Killerig* returned to Kingston, passing through the Canal on April 27.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

UNIVERSITY OF ILLINOIS

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MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, April 29, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt draft.	From—	For—	Cargo.		Panama Canal tonnage.
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	
India Arrow	22	13 50	23	6 20	23	15 35	23	17 03	American	Standard Oil Co.	408 3	02 7	27 0	Beaumont	Taku Bar.	Petroleum	10,982	7,426
Frederick Luck	22	14 23	23	7 10	23	16 00	23	17 17	American	Luckenbach Line.	317 5	40 2	24 0	Mobile	San Francisco	General	3,316	2,987
Honduras	22	7 21	23	7 45	23	17 33	23	17 39	French	French Line.	389 0	51 0	21 6	Havre	San Francisco	General	3,482	6,020
Toko Maru	22	6 25	23	8 03	23	17 11	23	18 16	Japanese	Yamashita Steamship Co.	385 0	52 0	24 6	Niigata	Yokohama	Sugar	6,012	5,151
Eastern Knight	22	18 56	23	9 38	23	17 35	23	18 46	American	Farber Line (S. B.)	415 1	55 7	27 7	Philadelphia	Manila	General	9,097	7,643
Selma City	22	6 46	23	11 35	23	18 13	23	19 50	American	United States Steel Products Co.	424 0	56 0	26 0	New York	Los Angeles	Steel and general	8,700	7,611
Shurston	22	6 46	23	11 35	23	18 13	23	19 50	American	H. M. Shear	424 0	56 0	26 0	Cristobal	Gatun Lake	Ballast	7,611	5,450
City of Rome	23	15 05	24	6 25	24	14 06	24	15 18	British	Ellerman Hall Line.	401 0	51 0	25 0	Hull, England	Portland	General	7,010	5,865
Phoenias	23	2 22	25	6 45	25	14 30	25	15 45	American	Luckenbach Line.	331 5	47 0	24 0	New Orleans	San Francisco	General	4,326	4,147
Alaskan	25	3 55	25	7 05	25	15 34	25	16 29	American	American-Hawaiian Line.	470 1	57 2	25 6	New York	Los Angeles	General	6,000	9,250
Sacchar	24	3 55	25	7 05	25	15 34	25	16 40	Panamanian	Louis F. Munoz	44 0	13 2		Cristobal	Ballao	Ballast	1,850	4,182
Hermes	25	9 40	26	6 12	26	14 17	26	23 34	Dutch	Royal Netherlands W. I. Mail.	345 0	48 0	15 3	Hamburg	Valparaiso	General	1,850	4,182
Canadian	26	10 19	26	10 30	26	17 20	26	20 35	British	Canadian Government.	400 6	52 0	18 1	Halifax	Auckland	General	1,878	5,893
Seigneur	26	6 19	26	12 05	26	19 02	26	19 35	British	McAndrews & Co.	303 4	45 1	17 3	New York	Guayaquil	General	1,677	2,878
Katrina Luck	25	18 05	27	6 30	27	14 30	27	15 35	American	Luckenbach Line.	446 0	55 1	23 10	Philadelphia	Los Angeles	General	3,000	8,508
Rualine	27	6 30	27	7 17	27	15 10	27	23 49	British	New Zealand Shipping Co.	480 6	60 3	26 2	London	Auckland	General	4,318	11,627
Manayi	20	13 12	27	10 20	27	17 10	27	19 37	British	Pacific Steam Navigation Co.	216 0	35 0	14 2	Cristobal	Guayaquil	General	518	1,357
Adrienne Irene	28	6 25	28	6 55	28	14 48	28	16 25	British	Adriatic Steamship Co.	375 0	52 5	23 0	Jacksonville	San Antonio	Coal	6,000	5,188
Gen. H. F.	14	14 40	29	6 00	29	9 05	29	9 05	American	Panama Railroad Steamship Line	323 5	39 0	13 9	Cristobal	Gatun Lake	Ballast	3,013	1,574
Hodges	28	17 47	29	7 18	29	14 45	29	16 05	American	Erre Basin Towing & Hoisting Co.	380 0	53 0	24 0	New Orleans	Los Angeles	General	6,674	6,557
Red Hook	28	19 43	29	8 50	29	16 16	29	17 07	American	United States Steel Products Co.	424 0	56 0	26 5	Baltimore	Honolulu	General	8,268	7,611
Amstion City	29	8 03	29	11 18	29	17 35	29	17 35	American	United States Navy	377 0	52 0	23 0	Hampton R'ds	Bremerton	General	4,200	5,450
Gold Star	29	8 03	29	11 18	29	17 35	29	17 35	American	United States Navy	377 0	52 0	23 0	Hampton R'ds	Bremerton	General	4,200	5,450

* Launch.

* Transport.

* Manufactured goods, iron, steel, and textile goods.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt draft.	From—	For—	Cargo.		Panama Canal tonnage.
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	
Somerset	22	11 00	23	8 03	23	15 45	23	18 05	British	Federal Steam Navigation Co.	480 0	62 8	24 0	Wellington	Avonsmouth	General	5,650	9,943
Plum Branch	23	9 15	23	11 03	23	18 35	24	6 08	British	F. & W. Watson.	398 0	53 0	22 0	Corral	Liverpool	Nitrate, general	5,965	5,701
Ribera	23	19 00	24	7 52	24	15 40	24	20 12	British	Bolton Steamship Co.	389 3	51 1	23 6	Iquique	Norfolk	Nitrate	6,503	3,881
Sciota	23	14 16	24	8 03	24	14 57	24	19 00	American	United States Navy	149 0	30 0		Baboo	Cristobal	General	8,268	4,042
Denver	23-9	10 45	24	9 35	27	14 23	1	10 10	American	United States Navy	292 0	44 0		Baboo	Cristobal	General	8,268	4,042

Essequibo	24	10	05	24	9	43	24	16	35	24	22	15	British	Pacific Steam Navigation Co.	450	0	53	0	26	0	Valparaiso	New York	4,548	9,099	6,117	General
Munaires	24	4	30	24	10	25	24	18	25	24	23	45	American	Munson Line	370	0	58	1	24	0	Grays Harbor	New York	5,777	4,225	5,777	Lumber
Texas	24	5	00	25	6	38	25	14	55	26	11	50	American	American-Hawaiian Line	471	0	57	2	28	6	Puget Sound	Liverpool	10,400	9,145	7,023	General
Cauca	25	15	00	25	8	03	25	15	20	30	6	10	British	Pacific Steam Navigation Co.	246	0	35	0	15	0	Charleston	Cristobal	1,589	1,018	1,589	General
Orin	25	19	00	25	9	20	25	10	35	26	1	50	British	Pacific Steam Navigation Co.	465	0	56	0	25	6	Valparaiso	Liverpool	3,847	8,620	5,345	General
San Francisco	25	19	00	25	7	36	25	15	05	26	18	20	American	United States Steel Products Co.	405	0	52	0	25	3	Vancouver	London	6,608	6,186	4,441	Lumber, general
Watuwa	26	9	00	26	10	10	26	16	40	26	10	40	British	Shaw, Saville & Alliton Co.	425	7	54	0	24	6	Pictou	London	3,659	7,498	5,433	General
Julia Luck	26	15	36	27	6	46	27	13	40	27	13	40	American	Lockenbach Line	437	0	57	0	25	4	Portland	Philadelphia	5,933	8,543	6,402	General
Robin Adair	26	17	40	27	8	01	27	15	25	27	18	20	American	Seas Shipping Co.	424	8	55	2	23	9	Los Angeles	New York	7,232	7,470	5,618	General
Mystic	27	4	35	27	8	39	27	17	08	27	19	44	American	Shawmut Steamship Co.	406	7	54	0	24	0	Tacoma	New York	6,623	4,923	6,623	Lumber
Kilgerr	27	7	40	27	9	41	27	15	55	27	19	12	British	London, Swann Hunter	172	0	30	0	12	0	Monta Bay	Kingsdon	575	152	575	Ballast
Birmingham	3-22	8	30	27	10	31	27	19	05	1	8	19	American	United States Navy	420	3	55	2	18	0	Palma	Cristobal	9,000	7,396	5,588	General
Asia	27	10	45	27	10	42	27	20	15	27	22	40	Danish	East Asiatic Steamship Co.	425	0	55	2	28	0	Portland	Denmark	6,500	6,897	5,063	General
Genoa Maru	27	11	30	27	11	30	27	20	44	27	20	44	Japanese	Nippon Yusen Kaisha	425	0	54	2	21	0	Osaka	New York	7,400	5,919	4,400	General
Cuba	27	13	00	27	14	15	27	22	00	27	22	00	American	Pacific Mail Steamship Co.	307	7	42	2	21	6	San Francisco	Cristobal	7	1,187	622	General
Kefuku Maru	27	23	00	28	8	56	28	16	35	28	16	35	Japanese	Kokusa Kisen Kaisha	385	0	51	0	20	7	Tunaco	Queensdown	90	15,233	10,471	Automobiles
Janaina	28	9	45	28	11	32	28	17	58	28	17	58	British	Pacific Steam Navigation Co.	220	0	34	0	10	7	London	Ito, Colombia	5,954	5,905	4,391	General
Hawkeye State	28	9	00	29	6	53	29	13	35	29	14	48	American	United States Shipping Board	517	7	72	2	32	6	London	Baltimore	6,077	6,140	4,298	General
Huachuco	28	8	15	29	9	23	29	20	39	29	17	10	British	Pacific Steam Navigation Co.	300	0	51	2	20	0	Alberdeen	Portland, Me.	3,295	2,156	3,295	General
Lohigh	29	8	25	29	10	31	29	18	06	29	19	05	American	United States Shipping Board	326	8	41	2	24	0	Valparaiso	Cristobal	1,273	705	1,273	General
Imperial	29	9	45	29	11	04	29	18	13				British	South American Steamship Co.	215	7	33	5	17	0	Champerico	Cristobal				
Acapulca	29	13	05	29	13	53	29	20	25					Pacific Steam Navigation Co.												

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

REPORT OF CRISTOBAL,

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
April 23	Oranie Nassau	Royal Netherlands W. I. Mail.	Port Limon.	April 23	Advance	Panama Railroad Steamship Line	Puerto Colombia.
April 23	Abangarez	United Fruit Co.	New Orleans via Habana.	April 23	Oranie Nassau	Royal Netherlands W. I. Mail	Puerto Colombia.
April 23	Gen. G. W. Goethals.	Panama Railroad Steamship Line	New York via Haiti.	April 24	Abangarez	United Fruit Co.	Bocas del Toro.
April 24	Camden.	United Fruit Co.	Tampico.	April 26	Achilles	Panama Railroad Steamship Line	Norfolk.
April 25	San Gil	United Fruit Co.	Boston and Habana.	April 26	Gen. G. W. Goethals.	Panama Railroad Steamship Line	New York via Haiti.
April 25	Toluca	United Fruit Co.	New York via Habana.	April 26	Toluca	United Fruit Co.	New York via wayports.
April 25	Parismina	United Fruit Co.	New Orleans via Port Limon.	April 26	Camden.	United Fruit Co.	Tampico.
April 25	Perou	French Line	St. Nazaire and wayports.	April 27	San Gil	United Fruit Co.	Boston via Port Limon.
April 27	Abangarez	United Fruit Co.	Bocas del Toro.	April 27	Parismina	United Fruit Co.	New Orleans via wayports
April 28	Oton.	Panama Railroad Steamship Line	Puerto Colombia.	April 27	Abangarez	United Fruit Co.	New Orleans
April 28	Royal Netherlands W. I. Mail.	Elders & Fyffes, Ltd	Amsterdam and Haiti.	April 28	Perou	French Line	Puerto Colombia.
April 29	Camito.	United States Army	Port Limon.	April 28	Holmia	Svenska Lloyd.	New Orleans.
April 29	Somme.	Eastern Commercial de Oriental.	Brooklyn via San Juan.	April 29	Camito.	Elders & Fyffes, Ltd.	Kingston.
April 29	Conde de Churrua	Tampico.	Liverpool and wayports.				
April 29	Settler	T. & J. Harrison	High seas.				
April 29	Hannibal	United States Navy					
* United States Army transport.				PORT OF BALBOA.			
April 20	W. J. Hanna	Standard Oil Co.	Paita.	April 28	W. J. Hanna	Standard Oil Co.	Talara.
April 22	Augusta Victoria	M. Valencia	Panama.	April 28	Augusta Victoria	M. Valencia	Panama.

Financial Receipts and Disbursements, March, 1922.

BALBOA HEIGHTS, C. Z., April 28, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: Herewith is a report showing the commissary sales, financial receipts and expenditures, and of the cash balance available in The Panama Canal appropriations for the month of March, 1922, as compared with the preceding month, and with the corresponding month of last year:

	March, 1922.	February, 1922.	March, 1921.
Cash balance available for expenditure in Canal appropriations on last day of month.....	\$11,741,940.27	\$11,996,276.91	\$11,058,468.77
Payments made from appropriations:			
By Paymaster on the Isthmus.....	891,747.77	905,108.33	1,542,364.57
By Disbursing Clerk, Washington, D. C.....	97,040.53	157,918.57	1,206,502.77
To the Panama Railroad Company (for commissary books).....	173,358.01	179,237.13	310,483.20
Collections on the Isthmus:			
Repaid to appropriations.....	513,416.00	760,759.67	861,894.93
Commissary and other trust funds.....	175,805.94	182,034.41	312,700.40
Tolls.....	956,734.11	866,285.08	1,105,566.19
Sales of water.....	32.75	1,680.20	8,335.85
Postal receipts.....	10,069.52	8,429.78	12,052.72
Licenses, taxes, court fees, fines, etc.....	3,009.00	3,836.97	3,564.70
Sales of construction material and equipment.....	3,091.00	525.00	1,911.79
Total collections on Isthmus.....	1,662,158.32	1,823,551.11	2,301,026.58
Collections by Disbursing Clerk, Washington.....	10,785.91	38,031.40	112,209.56
Deposits with Assistant Treasurer, United States.....	57,300.00	51,800.00	59,485.94
Canal Zone and miscellaneous funds:			
Receipts—			
Money order funds.....	129,898.22	106,328.64	244,347.61
Clubhouse funds.....	28,903.13	29,221.05	50,152.32
Trust funds.....	2,206.06	600.00	2,560.04
Interest.....	1,176.43	1,779.15	1,570.01
Total receipts.....	162,177.78	137,928.84	298,629.98
Disbursements—			
Money order funds.....	130,950.00	80,100.00	20,055.00
Clubhouse funds.....	24,951.08	25,466.49	50,751.94
Trust funds.....	1,173.85	183.96	1,173.21
Interest.....	442.78	323.06	817.11
Total disbursements.....	157,517.71	106,073.51	72,797.26
Pay roll on the Isthmus:			
Maintenance and operation.....	628,253.76	612,338.61	1,141,371.50
Sanitation.....	71,740.36	69,983.00	86,646.49
Civil Government.....	68,387.15	66,690.08	60,823.15
Totals.....	768,381.27	749,011.69	1,294,841.14
Requisitions for purchases in the United States.....	351,290.94	118,223.03	514,743.10
Sales of commissary supplies:			
To The Panama Canal.....	75,307.75	73,744.15	138,042.24
To steamships other than those of the United States Government and Panama Railroad.....	31,294.52	34,697.33	65,856.83
To the Panama Railroad, including its steamships and the Hotel Washington.....	18,719.85	17,597.43	25,532.93
To the United States Government, including the Army and Navy.....	84,125.92	64,714.25	133,333.08
To individuals and companies through charge accounts.....	27,159.72	24,869.21	25,281.84
To individuals purchasing coupons.....	317,701.26	289,640.52	504,908.51
Totals.....	554,309.02	505,262.89	892,956.03

Respectfully,

JAY J. MORROW,

Governor.

Postal and Cable Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Colonial, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal Washington."

Rental of Hotels Tivoli and Washington.

Sealed proposals will be received in the office of the Chief Quartermaster, Balboa Heights, C. Z., up until 10.30 a. m., June 1, 1922, and then opened, for the rental of the Hotels Tivoli and Washington.

Forms of proposals may be had upon application to the office of the Chief Quartermaster.

Towing of "Willpolo" to San Pedro Completed.

The Panama Canal tug *Tavernilla*, which left Balboa on April 10 to assist the steamship *Willpolo*, in distress off the coast of Nicaragua, reached San Pedro (Los Angeles) with the vessel in tow on April 28. The ship having been delivered in safety, and the legal formalities completed, the *Tavernilla* left for the Canal on May 2.

Difficulties Incident to Determination of "United States Equivalent" Net Tonnage, for Levy of Tolls.

Tolls on merchant ships passing through the Panama Canal are levied on the basis of their net tonnage. This net tonnage is essentially the interior spaces which may be used for the carriage of cargo or passengers, measured in tons of 100 cubic feet (2.83 cubic meters). The toll rates are \$1.20 per net ton, as thus determined under the Panama Canal rules of measurement, for ships carrying passengers or cargo (or fuel in excess of the bunker allowance),¹ and 72 cents per net ton for ships in ballast. But there is a proviso, based on the Act of Congress establishing the conditions of operation of the Canal, that the amount collectible shall not exceed the equivalent of \$1.25 times the net tonnage of the ship as determined under the rules for measurement for registry in the United States and shall not be less than 75 cents times that same United States registry measurement.

The effect of this is that the net tonnage must be computed according to both methods of measurement, and the tolls levied in accordance with the foregoing provisions. This has been found to be onerous and a departure from the simplicity of rules and management which is the ideal of the Canal administration. It has incurred added difficulties because the rules for measurement for registry in the United States are changed from time to time. The practical result is that the tolls are collected on a basis which is not fixed and permanent, but may change between the transits of a vessel or with minor changes in the condition of the ship herself, occurring in the course of her preparations for loading or discharging or on account of the weather.

Legislation to correct this situation has been recommended but so far has not been enacted. In the meantime, ships' operators not entirely familiar with the situation have shown some resentment at what has appeared to them an arbitrary practice which sometimes makes their tolls considerably more than they had anticipated. With the idea of explaining the situation, at least in part, the following paragraphs are quoted from a memorandum to the Chairman of the Board of Admeasurement of The Panama Canal from the chief admeasurer at Cristobal:

* * * * *

The main source (of misunderstanding and ill will in connection with measurement and the levy of tolls) lies in our consistent and impartial

¹ The bunker allowance is explained on page 84 of the *Rules and Regulations for the Operation and Navigation of the Panama Canal*, and in THE PANAMA CANAL RECORD, of Nov. 2, 1921, p. 185.

application of the portion of said rules (United States measurement rules) relating to the exemption of shelter deck, forecastle bridge, and poop spaces, with consequent propelling power percentage adjustment necessitated thereby. The vicious circle is started by a ship's arrival with the tonnage openings of one or more of the foregoing spaces closed in a manner incompatible for exemption under the United States rules. The inclusion of such spaces in the net tonnage as found under said rules results normally in an increase of 500 to 2,000 tons above their national net tonnage based on rules similar to those of the United States, whereupon in due course the owners, after ascertaining the reason through correspondence with their agents and the admeasurers, exhibit a not unnatural irritation in paying \$625 to \$2,500 more for their ship's transit than they contemplated.

One of the chief reasons for action along this line is the use of gaskets or battening around the tonnage openings. In some cases the owners have actually discharged masters of such vessels, maintaining they should have known enough to remove same prior to arrival for transit. It often happens the succeeding master has explicit instructions on the point and, at next arrival, requests remeasurement which results in exemption of such spaces and hence greatly decreased tolls bill. With heavy weather outside prior to the third arrival, the mate naturally battens and calks the tonnage opening closures again, usually without telling the master. This necessitates another remeasurement, again increasing the tolls bill and involving further trouble for owners, master, and admeasurers.

As long as the United States rules remain the normal toll factor, or any factor for that matter, there is no alternative but to strictly apply them. It can not be disputed, however, that a vacillating system which admits of such juggling has already caused such an ill-feeling on the part of steamship owners that the mere subject of measurement is like waving a red flag at a bull.

It can be contended that "ignorance is no excuse" and that they should study the rules, issue to their masters specific instructions thereon and see that same are carried out. Yet it often happens that when they think they are set straight on these matters it is found that they have overlooked one of the many vagaries of said rules and are thereby compelled to start all over again.

Many agents here are endeavoring to act as consulting admeasurers to their principals, almost invariably without sufficient knowledge, and thus causing increased resentment and exasperation on the part of the owners.

In one case a series of letters from an agent requesting specific and legitimate information on certain points respecting measurement of vessels of his principals necessitated 17 hours' study of our past records of ships mentioned, to formulate a proper reply; yet there still exist ample opportunities for structural errors affecting tolls bills, not covered in his communication or our reply, which fact was stated.

Another case involved a question of veracity between the master of a Greek ship and the boarding admeasurer. The former, endeavoring to hide what he feared would be considered a dereliction of duty, wrote his owners he had removed all "packings" around tonnage openings prior to arrival, while the latter's records evidenced the fact that this was not true and that all knowledge of the significance of such use was supplied him by his agent. Such incidents are unfortunate and most emphatically disrupt the pleasant relations which should be proverbial at Canal Zone ports.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered as fast as the ships can take it, from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice

plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended May 2:

Motor ship *Rosana*, open up engines; remove pistons; manufacture 42 piston rings and install, weld, and machine broken piston skirt; rebush 6 crosshead pins and manufacture pump springs; dredge *No. 86*, renew main deck house sills and deck; renew upper fender plank shear; renew 70 feet of upper deck sills and deck; renew ice box; build new gantry frames; change round spud wells to square; remove and replace deck machinery in wake of repairs; install new ladder brake wheel; redeck and calk galley floor; scale deck plates in way of replacement of wood decks.

PREVIOUSLY REPORTED.

Tug *Favorite*, convert from coal burner to oil burner.

The following vessels were at the Cristobal shops for repairs during the week ended May 1:

Steamships *Cauca*, manufacture spindle for Weir pump steam valve; manufacture form spindles and 8 brass springs for ballast pump; bore lubricator for refrigerator gland and alter plunger; reduce refrigerator crosshead bracket and adjust guide; manufacture 2 spindles for refrigerator condenser gauge; repair copper pipe in fiddley; manufacture steel washer for port winch; remetal crank-pin brasses on pump; repair firing tools; manufacture brass ring and washers for pump; repair boat deck service pipe; test boilers; repair dining room filters; install wash basin; paint 2 bathrooms and pantry; *Jamaica*, dock and undock; clean and paint bottom; repair anchor chain; open and test main condenser; renew ferrules and leaky tubes; clean and paint water spaces; renew plate on pump; repair suction pipe and discharge pipes; overhaul circulating pump; renew angle supports; repair firing tools; repair hand rail and runner; repair fore-peak tank suction pipe and cocks; renew towing chock; repair galley funnel; repair forward shoe; repair pantry sink and valve; renew galley grating; repair stove; manufacture grating for ice room; *Acajulla*, repair locking bar for hatch No. 1; repair pipe casing; repair hatch scales; calk upper deck; clean and paint forecandle; repair and adjust gauges; overhaul sanitary pump; manufacture 2 spindles for injector; schooner *Arabia*, steamships *Perou*, *Parismina*, *Orion*, launch *Activo*, steamship *Advance*; and U. S. S. *Hannibal*, minor repairs.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending April 29, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
<i>Cauca</i>	Pacific Steam Navigation Co.	April 25.....	April 25.....	4	
<i>Hermes</i>	Royal Netherlands W. I. Mail ..	April 26.....	April 26.....	89	
<i>Cuba</i>	Pacific Mail Steamship Co.	April 27.....	April 27.....	32	
<i>Manavi</i>	Pacific Steam Navigation Co.	April 27.....	April 27.....		4
<i>Jamaica</i>	Pacific Steam Navigation Co.	April 28.....	April 28.....	1	

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending April 29, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Oranje Nassau.....	Royal Netherlands W. I. Mail.....	April 23.	April 23.	10	76
Abangarez.....	United Fruit Co.....	April 23.	April 24.		238
Gen. G. W. Goethals.....	Panama Railroad Steamship Line.....	April 23.	April 26.	1,185	1,341
Camden.....	United Fruit Co.....	April 24.	April 26.	8,910	
Essequibo.....	Pacific Steam Navigation Co.....	April 24.	April 24.	30	32
Cauca.....	Pacific Steam Navigation Co.....	April 25.		1,243	
Santa Ana.....	Pacific Mail Steamship Co.....		April 25.		23
Tolosa.....	United Fruit Co.....	April 25.	April 26.	243	13
Oriana.....	Pacific Steam Navigation Co.....	April 25.	April 26.	5	
San Gil.....	United Fruit Co.....	April 25.	April 27.	14	296
Manavi.....	Pacific Steam Navigation Co.....		April 27.		514
Perou.....	French Line.....	April 25.	April 28.	33	726
Hermes.....	Royal Netherlands W. I. Mail.....	April 25.	April 26.	37	
Parismina.....	United Fruit Co.....	April 25.	April 27.	795	39
Alnagro.....	Pacific Steam Navigation Co.....	April 26.	April 26.	262	
Holmina.....	Panama Agencies.....	April 27.	April 27.		379
Cuba.....	Pacific Mail Steamship Co.....	April 27.		1,955	
Abangarez.....	United Fruit Co.....	April 27.	April 27.		220
Advance.....	Panama Railroad Steamship Line.....	April 28.		238	
Jamaica.....	Pacific Steam Navigation Co.....	April 28.		112	
Camito.....	United Fruit Co.....	April 28.	April 29.	96	
Acafutla.....	Pacific Steam Navigation Co.....	April 29.		960	
Cardiganshire.....	Pacific Steam Navigation Co.....	April 29.		190	
Settler.....	Leyland-Harrison Line.....	April 29.		465	
Conde de Churrua.....	Anglo-Saxon Petroleum Co.....	April 29.		6,225	
Imperial.....	South American Steamship Line.....	April 29.		701	
Cape Henry.....	Atlantic, Gulf and Pacific Co.....	April 29.		261	

* Pounds.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective April 15, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.25
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Rbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Rbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.51
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.50
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, machine engine.....	Lb.	.09
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.15
Paint, zinc, white, dry.....	Lb.	.124
Paint, zinc, white, in oil.....	Lb.	.09
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.14
Waste, cotton, white.....	Lb.	.15

Sale of Motor-driven and Animal-drawn Vehicles.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., up to 10.30 a. m., Monday, May 15, 1922, and then opened, for the purchase of the following vehicles located at the points indicated: At the Ancon Garage—4 Ford auto delivery cars, 1 Ford dump car, 1 Ford garbage

car, 1 White motor truck, 4 auto trailers, 1 surrey, 1 wagon, 1 wagonette, 2 wooden bodied for Ford delivery cars. At the General Storehouse, Balboa—6 wagons and 2 auto trailers. At the storehouse, Cristobal—13 wagons. Inspection of the vehicles may be made and forms of proposal may be had at the points indicated, or on application to the office of the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office
at Cristobal, C. Z., under the Act of March 3, 1879.

Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., May 10, 1922.

No. 39.

Three Optional Forms of Salvage Contract.

As noted in the article on The Panama Canal Salvage Section in THE PANAMA CANAL RECORD of April 19, The Panama Canal will undertake salvage operations under three forms of contract—a *per diem* basis, a lump sum agreement, or an agreement of "no cure, no pay." In order to expedite salvaging through minimizing the delay over terms, the Canal has prepared copies of the three types of agreement and is distributing them to steamship operators so that they may have them at hand for the emergency as well as familiarize themselves with the situation in advance.

The salvage agreement on a *per diem* basis, designated as Contract No. 1, is as follows:

Contract No. 1.

THE PANAMA CANAL.

CANAL ZONE.

DEPARTMENT OF OPERATION AND MAINTENANCE.

SALVAGE SECTION.

SALVAGE AGREEMENT ON PER DIEM BASIS.

AGREEMENT entered into this date between.....
Acting for the Owners and Underwriters of the.....
and her cargo according to their respective interest, and,.....
on behalf of The Panama Canal (Salvage Section):

(1) The said on behalf of The Panama Canal (Salvage Section) agrees to undertake the floating of the above-named..... and deliver her to..... or such other place or port as may hereafter be agreed upon by both parties named in this contract. It is further agreed that should the Salvors be detained after delivery of said vessel to the port or place agreed upon, they are to be paid for all expenses incurred, by the Owners or Underwriters.

(2) It is further agreed that for the above services the Salvors are to be paid at the rate of \$..... U. S. C. per day while actually engaged in salvage operation, and at the rate of \$..... U. S. C., while laying by. This time to be computed by the Salvors, and time to start from the time the Salvors leave port until their return. It is further agreed that the Salvors shall have a lien on said vessel, her gear, tackle, stores, supplies, equipment, machinery, and cargo salvaged in either case, Success or Failure, for their remuneration.

(3) It is further agreed that the Salvors are to have FREE use of said vessel's gear, tackle, stores, supplies, etc., for the purpose of salvage, and NOT to be responsible for any loss or damage to said vessel, gear, tackle, stores, and cargo, but to use ordinary care.

(4) It is further agreed that for the use, and loss, of extra equipment that may be necessary in salvaging the said vessel, such as pumps, hose, anchors, chain, rope, diver and diving equipment, barges, lighters, etc., the Owners or Underwriters are to pay The Panama Canal "Tariff Rate or Rates," as stated in Panama Canal Tariff No. and its supplements as may be issued from time to time, in addition to the daily rate as stated in paragraph No. 2 of this contract.

(5) Payment for said services to be made within..... after delivery of vessel to port or place agreed upon in paragraph No. 1 of this contract, or within days after the vessel is abandoned in case of failure.

(6) In the event of any dispute arising under the terms of this contract, the same to be left to the final decision of an Arbitrator to be mutually chosen.

.....
(For the Owners and Underwriters.)

.....
(For The Panama Canal—Salvage Section.)

Witness:

.....
(Name.)

.....
(Occupation.)

.....
(Address.)

LUMP SUM SALVAGE AGREEMENT.

The lump sum salvage agreement, designated as Contract No. 2, has the same introduction and provisions for signatures and witnesses as the *per diem* agreement, but makes the following-numbered conditions:

(1) The said on behalf of The Panama Canal (Salvage Section) agrees to undertake the floating of the above-named..... and deliver her to or such other place or port as may hereafter be agreed upon between both parties named in this contract. It is further agreed, that should the Salvors be detained after delivery of said vessel to the port or place agreed upon, they are to be reimbursed by Owners or Underwriters for all expenses incurred.

(2) It is further agreed that for the above-named services the Salvors are to be paid the sum of \$..... U. S. C. in case of success, and a minimum sum of \$..... U. S. C. in case of failure. The Salvors shall have a lien on said vessel, her gear, tackle, stores, supplies, equipment, machinery, and cargo salvaged for their remuneration.

(3) The Salvors to have FREE use of said vessel's gear, tackle, stores, supplies, etc., for the purpose of salvage, and NOT to be responsible for any loss or damage to said vessel's gear, tackle, stores, supplies, and cargo, but to use ordinary care.

(4) Payment for said services to be made within days after delivery of vessel to the place or port agreed upon in paragraph 1 of this contract, or within days after abandonment if the salvage operation is unsuccessful.

(5) In the event of any dispute arising under the terms of this contract, the same to be left to the final decision of an Arbitrator to be mutually chosen.

"NO CURE, NO PAY."

This agreement, No. 3, with customary introduction and signatures, provides:

(1) The said on behalf of The Panama Canal (Salvage Section) agrees to undertake the floating of the above-named..... and deliver her to or such other place or port as may hereafter be agreed upon by both parties.

(2) It is further agreed that for the above services The Panama Canal shall be paid the sum of \$..... U. S. C. in case of success, and a minimum of per cent of the value or proceeds of all property, equipment, machinery, gear, tackle, and ship's stores, and cargo salvaged in case of partial success, The Panama Canal shall have a lien on the cargo salvaged for their remuneration.

(3) The Panama Canal (Salvage Section) to have free use of the vessel's gear, tackle, stores, fuel, coal or oil, and any other material for the purpose of salvage, and NOT to be responsible for any loss or damage to ship's cargo, gear, tackle, stores, etc., but to use ordinary care.

(4) In the event of any dispute arising under the terms of this contract, the same to be left to the final decision of an Arbitrator, to be mutually chosen.

(5) Payment to be made within days after delivery of said vessel to port agreed upon as stated in paragraph 1 of this contract.

(6) All or any expenses incurred after delivery of said vessel to be borne entirely by the Owners or Underwriters.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 2, 1922.

The master of the steamship *San Ubaldo* reports:

"At 15 h. 30 m. T. M. T., April 30, in Lat. $17^{\circ} 35' N.$, Long. $72^{\circ} 56' W.$, passed spar projecting 3 feet above water, apparently attached submerged wreckage. Dangerous to navigation."

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 3, 1922.

The master of the steamship *Port Augusta* reported by radio yesterday as follows:

"At 9 h. G. M. T., May 2, at $5^{\circ} 38' N.$, Long.; $81^{\circ} 56' W.$, passed wooden vessel awash, 70 feet long. Name undecipherable. Dangerous to navigation.

"Robinson, master."

JAY J. MORROW,
Governor.

Notice to Mariners.—Aids to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 4, 1922.

The following information has been received from the Agent of the Leyland-Harrison Line at Cartagena, Colombia:

"On the 29th instant there will be started the service of a lighthouse erected on the island called 'Tesorito.' The position of the light is as follows:

"Lat. $10^{\circ} 14' 10''$ North.

"Long. $75^{\circ} 44' 50''$ West.

"White, intermittent, height 35 feet above sea level."

This light is probably on Isla Tesoro, just off the Cartagena Harbor.

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 4, 1922.

The master of the *Yankee Arrow* reports to-day by radio:

"Passed obstruction, May 3, 12.38 p. m., a trunk of tree, 60 feet long, partly submerged, $8\frac{1}{2}$ miles, 222° true to Jicaron Island. Dangerous to navigation."

JAY J. MORROW,
Governor.

Notice to Mariners—Aids to Mariners, the Isla Grande Light.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 9, 1922.

The navigating officer of the American steamship *Scottsburg* reports under date of May 4:

"At 3.10 a. m., 75th Mer. time. we observed Isla Grande light to be extinguished on bearing 130° true; the light remained extinguished for 25 minutes. Lat. $9^{\circ} 38' N.$, Long., $79^{\circ} 34' W.$ "

This office is receiving many similar reports of nonoperation of this light in the early morning hours, and shipping is hereby warned of its unreliability.

JAY J. MORROW,
Governor.

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, May 6, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.				
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.			
Canta	25	15	30	30	6	10	30	14	22	30	16	40	246.0	35.0	16.8	Cristobal	Champerico.	General	1,330	1,589	1,018	
Republic	29	15	04	30	7	35	30	16	45	30	16	05	376.0	49.0	21.0	Baltimore.	Valparaiso.	General	3,682	4,393	3,006	
Austral-rag	29	18	48	30	1	23	30	13	56	30	16	45	376.3	52.3	20.0	London.	Brisbane.	General	1,596	4,774	3,446	
Nearman	30	6	15	30	11	13	30	18	40	30	19	46	412.0	53.3	25.0	New Orleans.	Shanghai.	Kerosene	7,283	6,298	4,317	
Esor	30	6	45	30	11	40	30	18	40	19	58	388	231.5	35.2	13.6	New York.	Guayaquil.	General	433	1,471	999	
Cape Henry.	29	17	58	30	13	05	30	21	57	30	21	57	376.4	52.3	22.6	Baltimore.	Los Angeles.	General	3,962	5,148	3,523	
Port Augusta.	30	20	04	1	6	20	1	13	54	1	15	10	406.0	49.0	23.1	New York.	Auckland.	General	5,500	5,192	3,854	
La Paz	29	7	57	1	11	14	57	1	19	35	19	35	420.0	54.2	26.6	Hamburg.	Colon.	General	8,557	7,216	4,912	
Birmingham	27	19	05	1	8	53	1	16	01	1	18	38	414.5	55.0	19.6	Cristobal	Bahoa.	Ballast	6,437	4,442		
Cadizo	1	1	15	1	9	33	1	16	02	1	17	05	445.0	58.0	25.6	New York.	Talara.	General	8,714	7,651	5,425	
Tsuruma Maru	1	7	14	1	10	30	1	17	43	1	17	57	439.6	60.2	30.0	New York.	Yokohama.	General	10,992	9,019	6,226	
William Penn	1	7	30	1	11	05	1	17	38	2	18	38	330.0	48.7	24.3	New York.	Yokohama.	General	3,200	6,033	3,353	
Venezuela	30	2	30	1	11	05	1	17	58	2	17	55	445.0	58.0	30.6	New Orleans.	San Francisco.	General	10,908	8,622	6,293	
Eastern Trader.	1	7	58	1	12	08	1	19	14	2	15	50	468.3	62.7	27.0	Sabine.	Shanghai.	General	11,031	9,841	6,946	
Yankee Arrow	1	18	57	2	6	20	2	14	24	2	16	30	516.0	62.0	22.3	London.	Woosung.	Oil	4,218	11,420	8,385	
Cardianshire	29	20	00	2	7	19	2	15	15	3	16	30	336.8	41.2	24.3	Cristobal	Los Angeles.	General, glass.	375	3,296	2,156	
Imperial	29	18	13	3	6	08	3	13	58	3	20	13	356.0	52.2	23.0	Texas City.	Valparaiso.	General	5,723	4,940	3,316	
Freeport Sulphur No. 5.	3	5	52	3	6	23	3	14	51	4	20	08	356.0	52.2	23.0	Buenos Aires.	San Francisco.	Sulphur	4,876	6,123	4,282	
Chinaso Maru.	3	3	42	3	7	10	3	15	17	3	17	16	472.0	51.0	25.0	New York.	Kobe.	Gen., iron goods.	4,536	9,258	6,912	
Mexican	3	7	05	3	8	26	3	15	44	3	16	55	405.0	52.0	25.6	New York.	Los Angeles.	General	6,703	6,181	4,728	
Rosier	3	6	53	3	9	19	3	17	25	4	19	16	412.0	53.4	25.0	Tampico.	Manila.	General	7,048	6,232	4,274	
San Baldo	3	10	32	3	10	45	3	18	26	3	19	54	360.0	44.7	20.3	Cristobal	Valparaiso.	Gasoline, etc.	7,315	4,514	2,386	
Huallaga	30	16	40	3	11	05	3	20	31	3	20	31	496.0	68.0	24.0	New York.	Callao.	General	5,200	11,487	8,732	
Andrea F.	3	11	00	3	11	50	3	19	38	3	20	55	401.9	54.2	25.6	Tampico.	Los Angeles.	General	7,108	6,218	3,893	
Lukenbach.	3	14	06	4	15	14	4	15	40	4	15	40	390.0	51.0	22.0	Hamburg.	Cruz Grande.	Fuel oil	3,700	4,791	3,392	
San Leonardo.	3	14	06	4	15	14	4	15	40	4	15	40	385.0	51.0	22.0	Tampico.	Corral.	General, mach.	9,600	7,496	5,311	
Alda	3	23	05	4	7	58	4	16	30	4	16	03	385.0	51.0	27.0	New York.	Torrell.	Fuel oil	7,069	5,919	4,400	
Lempoc	3	20	58	4	9	45	4	17	56	4	19	05	397.8	56.0	27.3	Mobile.	Yokohama.	Steel	8,170	7,611	5,450	
Tokutu Maru	4	10	40	4	10	50	4	18	38	4	19	55	307.0	42.2	21.0	Cristobal	Manila.	General	2,343	3,429	2,206	
Tusaloosa City	27	22	40	4	11	50	4	18	53	4	23	55	390.8	54.2	23.1	Cristobal	San Francisco.	General	5,818	6,167	4,313	
Cuba	4	13	48	5	6	22	5	14	01	5	15	30	419.5	56.5	31.6	New York.	Los Angeles.	General	10,457	8,696	6,316	
Cold Harbor.	4	7	43	5	7	55	5	15	30	5	16	50	254.0	38.1	20.8	New York.	Shanghai.	Coal	2,506	1,780	1,620	
Scottsburg	4	7	55	5	7	55	5	15	30	5	16	50	372.0	51.5	18.7	Antwerp.	Astoria.	General, steel	2,960	5,274	3,886	
Tonawanda	5	18	50	6	6	25	6	13	54	7	1	05	302.2	51.1	22.5	New York.	San Francisco.	General	5,100	4,504	3,340	
Bordland	5	18	58	6	6	28	6	13	54	7	1	05	254.9	35.0	14.6	Portsmouth.	Shanghai.	General, case oil				
Grelland	6	10	25	6	10	40	6	16	45	6	22	40	254.9	35.0	14.6	Portsmouth.	Salina Cruz.	Ballast.				
No. 4009.																						
Guerrero																						

* Motor ship.

* Cruiser.

* Sailing ship.

* Motor ship.

* Cruiser.

* Sailing ship.

* Launch.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

REPORT OF CRISTOBAL,

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

*DEPARTURES.

Motor schooner.

U. S. Army transport.

(Continued on page 506, column 2.)

Commercial Traffic Through the Panama Canal in April, 1922, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>United States coastwise:</i>							<i>Long tons.</i>
United States	24	88,303	114,283	136,885	87,100	\$110,272.10	137,207
<i>From east coast of United States to Far East:</i>							
United States	6	27,866	36,399	43,629	28,021	34,832.50	56,565
Japanese	5	20,518	24,693	31,609	20,169	25,468.25	39,150
British	5	17,996	23,918	28,517	18,053	22,495.00	32,448
Norwegian	2	7,237	8,180	11,208	6,947	9,046.25	15,784
Dutch	1	3,694	4,317	5,792	3,379	4,617.50	7,283
Totals	19	77,311	97,507	120,755	76,569	96,459.50	151,230
<i>From east coast of United States to west coast of South America:</i>							
United States	9	27,955	33,015	42,962	27,761	33,276.38	25,963
British	4	11,065	13,291	17,570	10,571	13,831.25	12,249
Norwegian	3	3,590	4,152	5,577	3,470	4,487.50	2,296
Danish	1	2,339	3,712	3,582	2,254	2,923.75	4,517
Swedish	1	1,349	1,458	2,316	1,630	1,686.25	1,130
Totals	18	46,298	55,628	72,007	45,686	56,205.13	46,155
<i>From Europe to west coast of South America:</i>							
British	4	16,082	19,238	25,400	15,785	20,102.50	12,911
Dutch	2	4,399	7,452	7,107	4,396	5,498.75	4,220
German	1	4,446	5,154	7,056	4,493	5,557.50	4,360
Danish	1	4,257	5,341	6,650	4,247	5,321.25	4,696
Chilean	1	1,473	1,517	2,515	1,441	1,820.40	2,700
Totals	9	30,657	38,702	48,728	30,362	38,300.40	28,887
<i>From Europe to Australasia:</i>							
British	8	45,375	57,728	72,947	45,812	56,718.75	32,815
<i>From Cristobal to west coast of South America:</i>							
British	4	1,224	1,912	2,304	1,430	1,530.00	717
Chilean	2	3,608	6,250	7,612	4,560	4,510.00	1,460
Peruvian	2	2,495	5,356	8,049	4,187	3,118.75	849
Totals	8	7,327	13,518	17,965	10,177	9,158.75	3,026
<i>From Europe to west coast of United States:</i>							
British	3	11,507	15,606	18,437	11,618	12,924.23	11,032
Dutch	1	5,776	7,551	9,399	5,814	7,220.00	10,165
French	1	4,326	4,363	5,903	3,743	5,235.60	3,482
Danish	1	3,244	4,016	5,219	3,337	4,055.00	4,375
Totals	6	24,853	31,536	38,958	24,512	29,434.83	29,054
<i>From West Indies to Far East:</i>							
British	3	9,387	12,510	15,035	9,327	11,733.75	17,870
Japanese	2	5,780	7,347	9,136	5,796	7,925.00	11,999
Totals	5	15,167	19,857	24,171	15,123	18,958.75	29,869
<i>From east coast of United States to west coast of Canada:</i>							
United States	3	15,622	18,665	22,792	15,627	19,527.50	22,559
<i>From Cristobal to west coast of Central America:</i>							
British	3	2,145	2,416	3,746	2,194	2,681.25	2,504
<i>From east coast of United States to Australasia:</i>							
British	2	9,651	13,513	15,024	9,547	12,063.75	16,615
<i>From east coast of Canada to Australasia:</i>							
British	2	8,409	10,195	14,040	8,681	10,511.25	8,970
<i>From east coast of Mexico to west coast of South America:</i>							
Norwegian	1	4,418	5,043	6,987	4,422	5,522.50	9,200
United States	1	4,328	5,089	7,058	4,327	5,410.00	10,400
Totals	2	8,746	10,132	14,045	8,749	10,932.50	19,600
<i>From West Indies to west coast of South America:</i>							
Norwegian	1	1,608	1,762	2,471	1,484	1,280.16	16
British	1	102	152	524	197	109.44	
Totals	2	1,710	1,914	2,995	1,681	1,389.60	16

ATLANTIC TO PACIFIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of United States to Balboa, C. Z.:</i>							<i>Long tons.</i>
United States	2	4,953	6,129	8,054	4,916	\$4,872.75	1,000
<i>Colombian coastwise:</i>							
Norwegian	1	879	1,457	1,462	890	1,098.75	44
British	1	614	622	1,138	602	758.40	809
Totals	2	1,493	2,079	2,600	1,492	1,857.15	853
<i>From Europe to west coast of Canada:</i>							
British	1	5,297	6,334	8,401	5,341	6,621.25	3,900
<i>From east coast of Mexico to Balboa, C. Z.:</i>							
British	1	4,645	5,311	7,270	4,513	5,806.25	9,500
<i>From east coast of South America to Far East:</i>							
Japanese	1	3,645	4,230	5,761	3,556	4,556.25	4,758
<i>From east coast of South America to west coast of Canada:</i>							
United States	1	3,537	4,901	5,657	3,537	4,421.25	6,748
<i>From Europe to Hawaiian Islands:</i>							
Swedish	1	2,748	4,536	4,521	3,424	3,435.00	7,167
<i>From Cristobal to Gatun Lake:</i>							
United States	1	1,514	1,574	2,733	1,667	1,135.50	
Totals, April, 1922	121	409,406	520,688	650,055	410,266	505,319.46	562,433
Totals, March, 1922	138	472,020	586,041	724,316	461,154	580,374.55	581,932
Totals, April, 1921	118	397,568	492,506	615,818	391,141	490,505.91	500,801

PACIFIC TO ATLANTIC.

<i>United States coastwise:</i>							
United States	26	104,008	131,193	161,092	104,535	\$130,010.00	118,622
<i>From west coast of South America to east coast of United States:</i>							
United States	8	24,748	29,761	39,679	25,050	30,931.30	48,326
British	5	17,483	22,415	28,932	17,892	21,853.75	29,659
Norwegian	3	4,091	6,425	6,784	4,069	5,113.75	8,377
Swedish	1	1,340	1,399	2,257	1,583	1,675.00	2,675
Totals	17	47,662	60,000	77,652	48,604	59,573.80	89,037
<i>From west coast of South America to Europe:</i>							
British	6	18,220	25,292	29,929	18,217	22,775.00	31,574
German	2	7,483	9,933	11,971	7,554	9,353.75	14,200
French	1	3,600	4,146	5,765	3,681	4,500.00	6,450
Chilean	1	2,754	3,442	5,961	2,981	3,442.50	1,720
Dutch	1	2,494	3,195	4,385	3,195	3,117.50	2,175
Totals	11	34,551	46,008	58,011	35,628	43,188.75	56,119
<i>From west coast of South America to Cristobal, C. Z.:</i>							
British	4	1,224	1,912	2,303	1,430	1,530.00	310
Chilean	3	4,883	8,406	10,341	6,193	6,103.75	927
Peruvian	3	3,699	7,742	12,452	6,277	4,623.75	5,249
Totals	10	9,806	18,060	25,096	13,900	12,257.50	6,486
<i>From Australasia to Europe:</i>							
British	8	45,571	51,532	67,112	43,592	56,375.60	46,720
Japanese	1	3,368	4,598	5,446	3,311	4,210.00	3,462
Totals	9	48,939	56,130	72,558	46,903	60,585.60	50,182
<i>From west coast of United States to Europe:</i>							
United States	3	13,962	20,029	22,195	14,032	17,452.50	27,500
British	2	9,342	9,664	9,718	5,976	11,478.15	11,435
Danish	1	4,473	5,588	7,014	4,470	5,591.25	9,004
Japanese	1	4,357	4,400	5,857	4,259	5,280.00	7,429
Totals	7	32,134	39,681	44,784	28,737	39,801.90	55,368
<i>From Far East to east coast of United States:</i>							
Japanese	3	13,092	15,019	19,642	12,922	16,167.95	17,560
United States	3	12,555	16,950	20,046	12,546	15,693.75	16,314
Totals	6	25,647	31,969	39,688	25,468	31,861.70	33,874

PACIFIC TO ATLANTIC.—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From west coast of Canada to Europe:</i>							<i>Long tons</i>
Dutch.....	1	5,403	6,612	8,384	5,437	\$6,753.75	10,790
French.....	1	4,483	4,515	4,731	2,912	5,488.80	6,722
United States.....	1	3,160	4,449	5,102	3,164	3,950.00	6,631
British.....	1	2,801	3,443	4,510	2,842	3,501.25	5,227
Totals.....	4	15,847	19,019	22,727	14,355	19,693.80	29,370
<i>From west coast of Central America to Cristobal:</i>							
British.....	4	2,783	3,122	4,916	2,848	3,478.75	4,093
<i>From Australasia to east coast of United States:</i>							
United States.....	2	8,773	8,783	11,550	8,688	10,539.60	6,900
British.....	1	5,024	5,078	6,957	5,104	6,093.60	3,432
Totals.....	3	13,797	13,861	18,507	13,792	16,633.20	10,332
<i>From Balboa, C. Z., to east coast of Mexico:</i>							
British.....	1	4,645	5,311	7,270	4,513	3,823.92	.....
United States.....	1	1,119	1,304	1,779	1,082	938.88	.....
Totals.....	2	5,764	6,615	9,049	5,595	4,762.80	.....
<i>From west coast of Canada to east coast of United States:</i>							
United States.....	2	4,335	5,064	6,562	4,353	5,269.80	6,634
<i>From Australasia to east coast of Canada:</i>							
British.....	1	4,403	5,494	7,178	4,413	5,503.75	2,260
<i>From Hawaiian Islands to Europe:</i>							
Swedish.....	1	3,430	5,533	5,554	4,225	4,287.50	9,044
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,034	4,174	4,748	2,925	3,792.50	5,716
<i>From west coast of United States to South Africa:</i>							
Dutch.....	1	2,252	3,524	3,699	2,226	2,815.00	4,581
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	1	1,862	2,206	3,169	1,862	2,327.50	1,777
<i>From west coast of United States to east coast of Canada:</i>							
British.....	1	1,556	1,718	2,631	1,394	1,236.96	.....
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	119
<i>From west coast of South America to West Indies:</i>							
British.....	1	102	152	524	197	109.44	.....
Totals, April, 1922.....	109	362,526	454,145	569,283	362,562	447,936.65	483,614
Totals, March, 1922.....	96	314,739	389,770	502,655	314,880	376,352.21	378,137
Totals, April, 1921.....	109	373,548	462,997	587,269	366,435	437,471.18	406,812

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending May 6, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
La Paz.....	Pacific Steam Navigation Co.....	April 30.....	April 30.....	27	.....
Huallaga.....	Peruvian Line.....	April 30.....	April 30.....	1,870	.....
Gold Star.....	United States Government.....	April 30.....	May 2.....	4	.....
Venezuela.....	Pacific Mail Steamship Co.....	May 1.....	May 2.....	31	.....
Cuba.....	Pacific Mail Steamship Co.....	May 4.....	May 4.....	.....	32
Leonador.....	Pacific Mail Steamship Co.....	May 4.....	May 5.....	41	.....
Guaya Marin.....	Toyo Kisen Kaisha.....	May 5.....	May 6.....	200	.....
Laura C. Hall.....	Pacific Metals Transportation Co.....	May 6.....	May 6.....	7	.....

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 8, 1922.

The following radio was received by this office to-day from the U. S. S. *Birmingham*:
"Uprooted tree about 50 feet long and 10 feet in diameter, with roots attached observed floating, Lat. N. 8° 35', Long. W. 85° 04' at 8 a. m., 8th."

JAY J. MORROW, *Governor.*

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the week ended May 8:

Motor schooner *Arabia*, dock and undock; make and fit new tail shaft; launch *Activo*, fit new leathers; machine valve seats and make 4 new check valves for pump; P. R. R. barge No. 26, dock and undock; scale and paint bottom and hopper; remove old sealing and cement filling and renew same in center compartment; renew broken sections of hatch covers and fit same with grab irons and bolt together; renew fenders; refasten bow towing chock; renew gaskets and bolts in aft deck house hatch cover; steamships *Scottsburg*, repair steering gear telemotor; *Acajulla*, repair lifeboat, saloon door, and ice box door; schooner *Tonawanda*, manufacture bolts and nuts; steamship *Panama*, install new section of rubber retaining strip on cargo port; repair chain for motor boat starter; Colombian Navy Cutter No. 2, dock and undock; renew 25 hull plates and complete engine repairs; steamship *Jason*, repair ice machine coil; *Salvador*, calk forward well deck; repair lifeboat; repair main hatches Nos. 1 and 2; supply and fit new guard plate over steering rod; adjust 2 weighing machines; repair cargo gin; repair cargo hook and chain; repair force pumps; supply and fit new hand rail for accommodation ladder; repair dinghy; supply and fit new glass in standard compass; supply 4 mild steel flanges for fuel heater; repair fuel heater coil; overhaul injector; supply 4 valves and spindles for fuel tank and repair 1 valve; manufacture 2 winch stop handles; renew suction pipe; repair main check valve; repair wash deck pipe, sanitary pipe, and galley scupper; repair 7 canvas slings; manufacture canvas screen 21 feet by 4 feet; manufacture 3 tarpaulins; repair netting on stateroom doors; renew galley floor grating; repair door lock; renew port glass; *Venezuela*, rebabbit bearings; repair tank coils; make 4 coupling bolts; repair oil pipes; renew 2 T's; repair dutchman; manufacture 1 bench and fit grating; rehandle uptake doors and roll leaky tubes; *Advance*, manufacture 2 lead bilge strainers for fire room; manufacture 2 pieces of pipe 8 feet long; calibrate 10 steam gauges; fit new wood in brake bands on deck hoister.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending May 6, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Eiger.....	Caribbean Steamship Line.....	April 30.....	April 30.....	36	(¹)
Cauca.....	Pacific Steam Navigation Co.....	April 30.....	April 30.....		1,368½
Advance.....	Panama Railroad Steamship Line.....		May 1.....		80
La Paz.....	Pacific Steam Navigation Co.....	April 30.....	May 1.....	123	(¹)
Venezuela.....	Pacific Mail Steamship Co.....	April 30.....	May 1.....	119	173
Cardiganshire.....	Pacific Steam Navigation Co.....		May 2.....		7
Imperial.....	Chilean Line.....		May 3.....		378
Jamaica.....	Pacific Steam Navigation Co.....		May 3.....		16
Suriname.....	United Fruit Co.....	April 30.....	May 3.....	(¹)	198
Huallaga.....	Peruvian Line.....	April 30.....	May 3.....	1,857	330
Cartago.....	United Fruit Co.....	May 1.....	May 4.....	1,137	58
Varg.....	Caribbean Steamship Line.....	May 1.....	May 2.....	171	(¹)
Maria.....	Roland Steamship Line.....	May 2.....	May 2.....	50	(¹)
Calamares.....	United Fruit Co.....	May 2.....	May 3.....	315	428
Metapan.....	United Fruit Co.....	May 3.....	May 4.....	25	81
Panama.....	Panama Railroad Steamship Line.....	May 3.....		1,990	
Theben.....	Kosmos Line.....	May 3.....	May 3.....	2	27
Indiana.....	French Line.....	May 4.....		1½	
Tivives.....	United Fruit Co.....	May 4.....	May 4.....	2	5
Cuba.....	Pacific Mail Steamship Co.....		May 4.....		2,321½
Ecuador.....	Pacific Mail Steamship Co.....	May 5.....	May 6.....	1,415	422
Borgland.....	Norway-Pacific Line.....	May 5.....	May 6.....	140	(¹)
Laura C. Hall.....	Pacific Metals Corporation.....	May 6.....		73	
San Benito.....	United Fruit Co.....	May 6.....	May 6.....	15	133

¹ No cargo discharged.

² Packages.

³ No cargo laded.

Deceased and Insane Employees.

The estates of the following deceased or insane employees of The Panama Canal or the Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings, or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estates may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once:

DECEASED.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
George Morgan.....	57866	Jamaica.....	Folks River.....	R. & F. Agent.....	February 27, 1922.
Charles Weathers.....	38781	Barbados.....	Colon.....	D. Q. M., Cristobal....	April 3, 1922.
William Notice (Notyee).....	45559	Jamaica.....	Colon.....	R. & F. Agent.....	April 27, 1922.

INSANE.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of commitment.
James Campbell.....	59361	Jamaica.....	Cristobal.....	Coaling station.....	March 6, 1922.
Raymond Watson.....	62258	Jamaica.....	Mount Hope.....	Cattle industry.....	March 16, 1922.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective May 8, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.27
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.45
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.50
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.56
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.15
Paint, zinc, white, in oil.....	Lb.	.12½
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.14
Waste, cotton, white.....	Lb.	.15

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered as fast as the ships can take it, from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Official Circular.

Acting Captain of the Port, Cristobal.

THE PANAMA CANAL,
DIVISION OF OPERATION AND MAINTENANCE,
BALBOA HEIGHTS, C. Z., May 3, 1922.

To all concerned—Effective May 4, 1922, and during the absence on leave of Commander F. V. McNair, U. S. N., Assistant Port Captain H. L. Eden will act as Captain of the Port, Cristobal.

E. P. JESSOP,
Marine Superintendent.

Approved:

JAY J. MORROW,
Governor.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton; but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;
(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Mail Steamship Company, Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line). The Pacific Mail charges \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Scheduled Sailings of Panama Railroad Liners.

The following are proposed sailings of vessels of the Panama Railroad Steamship Line between Cristobal and New York, all voyages being by way of Port-au-Prince, Haiti:

NEW YORK TO CRISTOBAL.

Steamer.	Leave.	Arrive.
Gen. G. W. Goethals..	May 15.....	May 23.
Panama.....	May 25.....	June 2.

CRISTOBAL TO NEW YORK.

Colon.....	May 19.....	May 26.
Gen. G. W. Goethals..	May 29.....	June 6.
Panama.....	June 9.....	June 16.

Typewriters For Sale.

The Supply Department has on sale a limited number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, Supply Department, Administration Building, Balboa Heights.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Sale of Motor-driven and Animal-drawn Vehicles.

Sealed bids will be received in the office of the Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z., up to 10.30 a. m., Monday, May 15, 1922, and then opened, for the purchase of the following vehicles located at the points indicated: At the Ancon Garage—4 Ford auto delivery cars, 1 Ford dump car, 1 Ford garbage car, 1 White motor truck, 4 auto trailers, 1 surrey, 1 wagon, 1 wagonette, 2 wooden bodies for Ford delivery cars. At the General Storehouse, Balboa—6 wagons and 2 auto trailers. At the storehouse, Cristobal—13 wagons. Inspection of the vehicles may be made and forms of proposal may be had at the points indicated, or on application to the office of the Chief Quartermaster. The Panama Canal reserves the right to reject any or all bids.

Binders for The Panama Canal Record.

Cardboard covers, punched and fitted with brass fasteners, forming binders for THE PANAMA CANAL RECORD, are offered for sale at 25 cents a set, for the benefit of those who wish to keep a file of the issues for ready reference. Orders may be addressed to The Panama Canal, Balboa Heights, Canal Zone, or The Panama Canal, Washington, D. C.

Sale of Cattle.

Grade Holstein bull calves 1 to 3 months old from registered sires. Also grade Hereford and Durham bulls and heifers 6 months to 2 years old. Sales will be made upon first satisfactory offer. For further information inquire Superintendent, Cattle Industry, Room 269, Administration Building, Balboa Heights.

Scrap Burlap Bagging.

The Supply Department has on hand, available for sale, at the general storehouse, Balboa, a large quantity of scrap burlap bagging included in which are a quantity of clean but torn burlap bags.

This material is suitable for packing furniture, etc., and is offered at a price of 3 cents per pound put up in bales averaging 250 pounds each, or in smaller quantities if desired.

Arrangements for purchase should be made direct with the General Storekeeper, Balboa, C. Z.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars to those receiving THE PANAMA CANAL RECORD. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Hours of Departure of Passenger Trains.

Following are the hours of departure of the passenger trains of the Panama Railroad running between the Atlantic and the Pacific:

From Colon: 9.10 a. m., 12.15 p. m., 4 p. m.

From Panama: 7 a. m., 12.15 p. m., 6.10 p. m.

The trains leaving at 12.15 p. m. do not run on Sundays and holidays; the others are daily.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 499.

PORT OF CRISTOBAL.—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
May 6.	San Benito.	United Fruit Co.	Port Limon.	May 4.	Cartago.	United Fruit Co.	New Orleans via wayports.
May 6.	Advance.	Panama Railroad Steamship Line.	Puerto Colombia.	May 4.	Metapan.	United Fruit Co.	New York via wayports.
				May 4.	Tivives.	United Fruit Co.	New York via Kingston.
				May 5.	Hambal.	United States Navy.	High seas.
				May 6.	Zacapa.	United Fruit Co.	New York via wayports.
				May 6.	San Benito.	United Fruit Co.	Bocas del Toro.
PORT OF BALBOA.							
May 5.	San Joaquin.	W. Wilhelmsen.	Tonopilla.	May 5.	San Joaquin.	W. Wilhelmsen.	Los Angeles.
May 5.	Ginyo Maru.	Toyo Kisen Kaisha.	Hongkong.	May 6.	Ginyo Maru.	Toyo Kisen Kaisha.	Valparaiso.

*Other than ships passing through the Canal.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., May 17, 1922.

No. 40.

Heavy Loading of Three Steamers.

The steamship *Willhilo* of the Williams Steamship Company, passing through the Canal on May 12 from New York to Los Angeles, San Francisco, and Seattle, was reported by her master as carrying general cargo amounting to 10,075 tons. The *Willhilo* is a ship of 5,816 gross, and 3,567 net tons, United States registry measurement, 435 feet in length by 57.6 feet beam, and was, accordingly, well loaded. She was drawing 25.6 feet of water at time of transit.

During the calendar year 1921 the 428 vessels which passed through the Canal in the United States coastwise trade had aggregate registered net tonnage of 1,739,312 tons and carried a total of 1,944,118 tons of cargo. The ratio of tons of cargo to net tons was 1.12 tons of cargo per net ton. In the case of the *Willhilo* the ratio was 2.82.

The items reported on the cargo declaration for the *Willhilo* were as follows: Agricultural implements, 12 tons; automobiles, 4; canned fruits, 22; canned vegetables, 72; cement, 240; chemicals, 59; manufactured goods of iron and steel, pipe, etc., 6,652; machinery, 437; textiles, 1,271; other manufactured goods, not separately listed, 1,037; paper, 28; rubber tires, 3; tobacco, 21; leather, 3; carbide, 16; pig iron, 58; sheet tin, 140. The total of the foregoing is 10,075 tons.

Inasmuch as the Panama Canal net tonnage of the *Willhilo*, which is the interior space which can be devoted to carrying passengers or cargo, in tons of 100 cubic feet, is 5,882 tons, it is theoretically possible to load the ship with $2\frac{1}{2}$ times as many tons of 40 cubic feet, the space measurement of a ton of cargo.

The British steamer *Sheaf Mead* (formerly the *Hawkser*), of 2,689 net registered tons, passed through the Canal on May 12, bound from Jacksonville, Fla., to San Antonio, Chile, with 6,000 tons of coal, a ratio of cargo to net tonnage of 2.23. The Panama Canal net of the *Sheaf Mead* is 4,008 tons.

The Japanese steamer *Hague Maru*, making the transit on the 13th, on the way from New York to Yokohama and Hongkong, reported 8,530 tons of structural steel, machinery, and general cargo. Her registered net tonnage is 3,591 tons, and the ratio of cargo to registered net on this voyage was 2.38. Her Panama Canal net measurement is 4,507 tons.

These instances afford striking examples of the differences between registered net tonnage, as established by the various national rules, and the net tonnage as determined by the Panama Canal rules for the purpose of measuring the actual capacity of the ship for carrying cargo or passengers.

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, May 13, 1922.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.	Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.									Tons.	Net.
Howick Hall	6	17 32	7	6 08	7	13 54	7	15 25	American.	United States Steel Products Co.	400.8	51.5	27.0	Baltimore.	Los Angeles.	General and steel	7,210	6,095 4,381
Bethore	7	1 21	7	7 30	7	15 33	7	18 21	American.	Guaranty Trust Co.	550.0	72.0	21.6	New York	Cruz Grande.	Ballast	8,600	15,476 11,102
Kaweah	7	1 06	7	7 45	7	16 20	7	19 08	American.	United States Navy	430.0	58.0	22.6	Port Arthur.	Balboa	Oil and airplanes	4,364	7,091 5,002
Iowa	7	8 20	7	8 40	7	16 37	7	17 45	American.	American-Hawaiian Line.	408.0	53.0	22.0	Boston.	Los Angeles.	General	8,491	6,096
Calacallote.	7	10 28	7	10 40	7	17 38	7	20 28	British.	Imperial Oil Co.	463.0	60.0	18.0	New York	Talara.	Ballast.	8,700	7,611 5,454
Steel Navigator	7	1 50	7	13 00	7	20 30	7	21 36	American.	United States Steel Products Co.	424.0	56.0	27.0	New York	Vancouver.	General, steel.	8,700	7,611 5,454
Whitshire	8	11 25	8	11 40	8	18 38	8	19 15	British.	Federal Steam Navigation Co.	526.10	61.4	28.6	Liverpool.	Auckland.	General	6,654	12,514 9,026
Saint Jean	7	14 07	8	11 50	8	19 38	8	21 20	British.	French Line.	397.0	52.0	16.0	Antwerp.	Valparaiso.	General	795	5,849 4,081
Jason	8	4 59	8	12 45	8	20 38	8	21 20	Dutch.	Royal Netherlands W. I. Mail	346.4	48.4	15.8	Hamburg.	Talcahuano.	General	1,650	4,321 3,120
West Notus	9	1 12	9	6 30	9	14 07	9	15 30	American.	Swayne & Hoyt (S. B.)	410.5	54.3	22.8	Buenos Aires.	San Francisco	General	6,331	6,583 4,914
Laura C. Hall.	8	20 46	9	6 16	9	14 04	9	15 46	British.	Pacific Metals Corporation.	81.0	25.6	9.0	Cristobal.	Talcahuano.	General	15	132 72
Potosi	8	22 21	9	8 25	9	15 46	9	17 00	British.	Pacific Steam Navigation Co.	381.0	49.0	23.6	Middlesburgh	Buenaventura.	General	4,592	5,567 4,296
Targis	9	8 13	9	13 13	9	19 44	9	21 08	German.	Roland Line.	265.0	42.0	17.1	Hamburg.	Champerico.	General	999	2,174 1,320
City of Yokohama	9	7 38	10	6 10	10	14 18	10	15 39	British.	Ellerman Lines.	465.1	58.1	28.4	New York	Melbourne.	General	8,395	9,581 7,308
bama	9	18 40	10	7 25	10	15 25	10	17 07	British.	Sheridan Steamship Co.	440.0	56.0	26.9	Tampico.	Tocopilla.	Oil	9,317	7,693 4,822
Teco.	9	18 57	10	8 06	10	15 49	10	18 02	American.	Grace Line	360.2	51.6	25.0	New York	Talcahuano	General	3,501	5,694 3,975
Santa Luisa.	10	1 40	10	8 50	10	17 23	11	23 40	American.	U. S. and Australian Line (S. B.)	409.8	54.2	23.0	New York	Sydney	Gen. petroleum	4,925	6,588 4,824
West Cherow	10	1 40	10	8 50	10	17 23	11	23 40	American.	U. S. and Australian Line (S. B.)	409.8	54.2	23.0	New York	Sydney	Gen. petroleum	4,925	6,588 4,824
San	10	6 45	10	10 48	10	18 12	11	19 45	British.	China Mutual Steam Nav. Co.	480.0	58.3	30.10	New York	Yokohama	General	9,500	9,347 6,611
Thithorn	10	15 25	11	6 25	11	13 50	11	15 30	Norwegian.	Britannia Steamship Co.	420.0	53.9	29.3	New York	Yokohama	General	9,394	6,591 4,730
F. J. Lucken-	10	23 28	11	7 25	11	14 43	11	16 00	American.	Luckenboth Line.	446.0	58.0	24.0	Philadelphia	San Francisco	General	4,500	8,508 6,179
bach	11	2 10	11	8 09	11	16 13	11	17 30	American.	Wessel Duval & Co. (S. B.)	409.8	54.2	24.0	New York	Talcahuano	General, coal	6,300	6,589 4,809
West Jaffrey	11	5 07	11	9 00	11	16 18	11	17 35	Swedish.	Svenska Lloyd & Co. (S. B.)	271.2	41.6	18.10	New York	Talcahuano	General	1,495	2,359 1,399
Lombardia.	10	15 07	11	9 00	11	16 18	11	17 35	Swedish.	Svenska Lloyd & Co. (S. B.)	271.2	41.6	18.10	New York	Talcahuano	General	1,495	2,359 1,399
Agawista.	11	15 10	11	11 00	11	18 30	11	19 41	American.	New York and Cuba Mail S. S. Co.	215.0	33.0	13.11	Key West.	Vancouver	Sugar	6,600	5,223 4,203
Salvador.	7	15 10	12	6 04	12	12 53	12	15 45	British.	Pacific Steam Navigation Co.	215.0	33.0	13.11	Cristobal.	Guayaquil	General	282	1,213 692
Acapulca.	4-20	20 35	12	6 05	12	12 48	12	16 20	British.	Pacific Steam Navigation Co.	215.0	33.0	13.11	Cristobal.	Champerico	General	416	1,273 706
Santa Maria	11	19 45	12	7 40	12	15 25	12	17 05	British.	Santa Maria Steamship Co.	460.0	60.0	27.6	Tampico	Antofagasta.	Oil	11,036	8,746 5,679
Sheaf Mead.	12	7 30	12	8 05	12	16 07	12	17 40	British.	W. A. Souter and Co.	380.2	53.0	28.3	Tampico	Antofagasta.	Oil	6,000	7,983 5,882
Brille.	12	6 10	12	10 25	12	17 47	12	19 10	Dutch.	Royal Netherlands W. I. Mail.	402.5	58.0	29.3	Jacksonville.	San Antonio.	Coal	8,670	7,983 5,882
Willho.	12	11 33	12	11 30	12	18 37	12	20 05	American.	Williams Steamship Co.	435.0	57.6	25.6	New York	Kobe	Steel, iron, gen	10,073	7,983 5,882
Erirken	12	3 09	12	12 30	12	20 23	12	22 10	Norwegian.	Haakon J. Wallen	420.0	54.0	27.8	New York	Seattle	General	7,300	6,979 5,131
Santa Isabel	12	6 40	12	12 40	12	19 42	12	20 53	American.	American and Cuban S. S. Co.	251.0	43.0	21.10	New York	Yokohama.	Case oil	3,185	2,823 1,740
Janaina	12	7 25	13	6 10	13	11 11	13	17 00	British.	Pacific Steam Navigation Co.	220.0	34.0	14.3	San Francisco	Tumaco	General	810	1,187 622
Hokkol Maru.	12	16 14	13	7 12	13	14 46	13	16 00	Japanese.	Yamashita K. Goshi Kaisha.	400.0	52.0	22.4	Trinidad.	Portland	Pitch	5,000	6,117 4,459
Canadian	12	18 55	13	8 00	13	15 47	13	17 25	British.	Canadian Government.	400.0	52.0	19.0	Halifax.	Brisbane.	General	1,572	5,889 4,103
Leader.	13	11 00	13	11 15	13	18 13	13	19 24	Japanese.	Osaka Shosen Kaishuiki Kaisha.	407.7	53.7	22.0	Halifax.	Hongkong.	General	8,530	6,202 4,507
Hague Maru	13	20 20	13	12 25	13	19 10	13	20 15	American.	American-Hawaiian Line	437.7	53.7	22.0	Philadelphia.	Los Angeles.	General	3,215	7,098 5,029

* Motor schooner.

* General, structural steel, and machinery.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
May 7.	Atenas	United Fruit Co.	New Orleans via Habana.	May 8.	Arabia	Panama Plantation Syndicate.	Colon.
May 8.	Venezuela	Royal Netherlands W. I. Mail Co.	Amsterdam via wayports.	May 8.	Atenas	United Fruit Co.	Bocas del Toro.
May 8.	Heredia	United Fruit Co.	New Orleans.	May 9.	Panama	Panama Railroad Steamship Line.	New York via Haiti.
May 9.	San Blas	United Fruit Co.	Boston via Habana.	May 10.	Advance	United Fruit Co.	Puerto Colombia.
May 9.	Pastores	United Fruit Co.	New York via Habana.	May 10.	Pastores	United Fruit Co.	New York via wayports.
May 9.	Haiti	French Line.	St. Nazaire via wayports.	May 11.	Heredia	United Fruit Co.	New Orleans via wayports.
May 10.	Buenos Aires.	Spanish Line.	Barcelona via Habana.	May 11.	San Blas	United Fruit Co.	Boston via Port Limon.
May 11.	Atenas	United Fruit Co.	Bocas del Toro.	May 11.	Atenas	United Fruit Co.	New Orleans.
May 11.	Colon	Panama Railroad Steamship Line.	New York via Haiti.	May 11.	Venezuela	Royal Netherlands W. I. Mail.	Port Limon.
May 12.	Bayano	Elders & Fyffes, Ltd.	Port Limon.	May 12.	Buenos Aires	Spanish Line.	Puerto Colombia.
May 13.	John Worthington.	Standard Oil Co.	Tampico.	May 12.	Haiti	French Line.	Puerto Colombia.
May 13.				May 13.	Bayano	Elders & Fyffes, Ltd.	Kingston.

* Other than ships passing through the Canal.

For orders.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
May 7.	Atenas	United Fruit Co.	New Orleans via Habana.	May 8.	Arabia	Panama Plantation Syndicate.	Colon.
May 8.	Venezuela	Royal Netherlands W. I. Mail Co.	Amsterdam via wayports.	May 8.	Atenas	United Fruit Co.	Bocas del Toro.
May 8.	Heredia	United Fruit Co.	New Orleans.	May 9.	Panama	Panama Railroad Steamship Line.	New York via Haiti.
May 9.	San Blas	United Fruit Co.	Boston via Habana.	May 10.	Advance	United Fruit Co.	Puerto Colombia.
May 9.	Pastores	United Fruit Co.	New York via Habana.	May 10.	Pastores	United Fruit Co.	New York via wayports.
May 9.	Haiti	French Line.	St. Nazaire via wayports.	May 11.	Heredia	United Fruit Co.	New Orleans via wayports.
May 10.	Buenos Aires.	Spanish Line.	Barcelona via Habana.	May 11.	San Blas	United Fruit Co.	Boston via Port Limon.
May 11.	Atenas	United Fruit Co.	Bocas del Toro.	May 11.	Atenas	United Fruit Co.	New Orleans.
May 11.	Colon	Panama Railroad Steamship Line.	New York via Haiti.	May 11.	Venezuela	Royal Netherlands W. I. Mail.	Port Limon.
May 12.	Bayano	Elders & Fyffes, Ltd.	Port Limon.	May 12.	Buenos Aires	Spanish Line.	Puerto Colombia.
May 13.	John Worthington.	Standard Oil Co.	Tampico.	May 12.	Haiti	French Line.	Puerto Colombia.
May 13.				May 13.	Bayano	Elders & Fyffes, Ltd.	Kingston.

* Other than ships passing through the Canal.

The Return of the "Tavernilla" from Los Angeles.

The Panama Canal tug *Tavernilla*, which towed the steamer *Willpolo* from the Pacific coast of Nicaragua to Los Angeles, arriving there on April 28, returned to the Canal on May 15.

Capt. H. O. Loken, commanding the *Tavernilla*, gave the following summary of the voyage:

"We received orders at Cristobal at 10.30 a. m., April 10, and left for passage through the Canal at 11.30 a. m., arriving at Balboa at 7.00 p. m. After taking fuel and stores at Balboa we cleared for sea at 11 p. m.

"We arrived at the steamer *Willpolo* on April 14 at 10.45 p. m., in latitude 12° 59' N. and longitude 93° 26' W. She had been adrift since April 5, when she lost her propeller, 701 miles W. N. W. of Balboa, and to the time of the arrival of the tug had drifted 349 miles, west-northwest, on the track to California, averaging about 31 miles a day, for 10 days and 16 hours drifted.

"We started towing for San Pedro at 1 a. m., April 15. We arrived at San Pedro on the 28th at 3 p. m., towing 1,960 miles in 13 d. 17 h. 17 m. an average speed of 5.89 knots. During this time the *Tavernilla* ran in close to the coast of Mexico and took oil and water from the *Willpolo*, twice in open sea. On the 17th we were met by the tug *Sea Lion*, from San Francisco, which assisted us in making the tow to San Pedro. For the last 1,000 miles we were towing against a N. W. swell, but the weather was fine. The last day, in order to get to dock before evening, we opened up and went into San Pedro at a speed of over 7 knots. The *Willpolo* is an 5,175-ton ship, heavily loaded at the time and drawing 24½ feet of water.

"In San Pedro we cleaned boilers, and got out on the 2d of May. Coming back, we made the trip from San Pedro to Balboa, via Salina Cruz, a distance of 3,021 miles, at an average speed of 245 to 250 miles a day, without pushing the engines. We stopped a day at Salina Cruz for oil.

"Going up with the *Willpolo* in tow, we ran into thousands of turtles while crossing the southern part of the Gulf of California, west of Manzanillo. We caught two with a net, and they made fine steaks and soup. After leaving Salina Cruz, we saw only a few.

"The Los Angeles papers gave us good notices, and some of them said this was the heaviest towing job that had been performed on the coast. A number of old Canal people now living in Los Angeles came down to see us."

Transit of Ward Line Steamer "Agwistar."

The steamship *Agwistar* of the New York and Cuba Mail Steamship Company (Ward Line) made the transit of the Canal on May 11 from Matanzas, Cuba, with 6,600 tons of sugar consigned to Vancouver. The local agents, the Anglo-American Steamship Agencies, advise that this is not the beginning of a regular service but simply a special voyage. The Ward Line began a service through the Canal between the Atlantic coast of the United States and the west coast of Central America and Mexico in October, 1916, but discontinued it in 1917 in order to use the vessels on more attractive trades.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending May 13, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Salvador.....	Pacific Steam Navigation Co.....	May 7.....	May 7.....	1	
Kaweah.....	United States Navy.....	May 8.....	May 10.....	454	
Laura C. Hall.....	Pacific Metals Transp. Co., Ltd.....	May 9.....	May 9.....		1
Turpis.....	Roland Line.....	May 9.....	May 9.....	32	
Acajutla.....	Pacific Steam Navigation Co.....	May 12.....	May 12.....		5
San Juan.....	Pacific Mail Steamship Co.....	May 12.....	May 13.....	19	2
Huasco.....	South American Steamship Co.....	May 12.....	May 13.....	77	
Jamaica.....	Pacific Steam Navigation Co.....	May 13.....	May 13.....		12
Manavi.....	Pacific Steam Navigation Co.....	May 13.....	May 13.....	6	

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Week Ending May 13, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Atenas.....	United Fruit Co.....	May 7.....	May 8.....	(¹) 52	201
Saint Jean.....	French Line.....	May 7.....	May 8.....		(²)
Salvador.....	Pacific Steam Navigation Co.....	May 7.....	May 12.....	829	277
Jason.....	Royal Netherlands W. I. Mail.....	May 8.....	May 8.....	121	(²)
Heredia.....	United Fruit Co.....	May 8.....	May 11.....	783	88
Venezuela.....	Royal Netherlands W. I. Mail.....	May 8.....	May 11.....	43	(²)
Targis.....	Roland Line.....	May 9.....	May 9.....	131	(²)
Panama.....	Panama Railroad Steamship Line.....		May 9.....		2,388
Indiana.....	French Line.....		May 9.....		1,109
Laura C. Hall.....	Pacific Metals Corporation.....		May 9.....		44
San Blas.....	United Fruit Co.....	May 9.....	May 11.....	13	54
Pastores.....	United Fruit Co.....	May 9.....	May 10.....	354	256
Advance.....	Panama Railroad Steamship Line.....		May 10.....		158
Haiti.....	French Line.....	May 9.....	May 12.....	12	100
Lombardia.....	N. O. & S. A. S. S. Co.....	May 10.....	May 11.....	275	(²)
Montana.....	French Line.....	May 10.....	May 11.....	1	(²)
Buenos Aires.....	Spanish Line.....	May 10.....	May 12.....	142	325
Gen. O. H. Ernst.....	Panama Railroad Steamship Line.....	May 10.....	May 12.....	1,077	(²)
Atenas.....	United Fruit Co.....	May 11.....	May 11.....	15	4
Jamaica.....	Pacific Steam Navigation Co.....	May 12.....	May 13.....	14	210
Colon.....	Panama Railroad Steamship Line.....	May 12.....		1,774	
Mantaro.....	Peruvian Line.....	May 13.....		1,272	
Bayano.....	Elders & Fyffes, Ltd.....	May 13.....	May 13.....	40	1
Manavi.....	Pacific Steam Navigation Co.....	May 13.....		211	
Huasco.....	Chilean Line.....	May 13.....		395	
San Juan.....	Pacific Mail Steamship Co.....	May 13.....		1,472	
Granfos.....	Caribbean Steamship Line.....	May 13.....		211	
John Worthington.....	Standard Oil Co.....	May 13.....		10,800	

¹ No cargo discharged.² No cargo laded.

Regulating Water in Gatun Lake.

THE PANAMA CANAL, DEPARTMENT OF OPERATION AND MAINTENANCE,
BALBOA HEIGHTS, C. Z., May 9, 1922.

To all concerned—The following schedule for maintaining Gatun Lake during the 1922 rainy season will be adhered to as closely as conditions permit:

The lake will be allowed to fill to elevation plus 85.5 feet before any water is wasted over the spillway. This elevation should be reached the latter part of June.

The lake will be held between elevations plus 85.5 feet and plus 86 feet until the 1st of October; filled to elevation plus 86.5 feet in October; and the filling will be completed to elevation plus 87 feet in November.

The allowable variation in lake level will be 0.5 foot to lessen the number of spillway gates operated simultaneously in regulating the lake level.

M. L. WALKER,
Engineer of Maintenance.

Notice to Mariners.—Aids to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 11, 1922.

Capt. J. E. Stone of the American steamship *General O. H. Ernst*, reports:

VISIBILITY OF LIGHTS ON THE COAST OF ECUADOR.

Manta Light (changed from old light):

Flash 0.9 sec., eclipse 8.1 secs.

One flash every 9 seconds.

Visible 14 nautical miles.

Cape San Lorenzo (new light):

Flash 0.5 sec., eclipse 1.0 sec.

Flash 0.5 sec., eclipse 1.0 sec.

Flash 0.5 sec., eclipse 11.5 secs.

Three flashes every 15 seconds.

Visible 15 nautical miles.

Cape Pasado (new light):

Flash 1.2 secs., eclipse 10.8 secs.

One flash every 12 seconds.

Visible 19 nautical miles.

Cape Pasado light is obscured in the southerly approach east of N. 17 E. true.

Land formation and trees prevent seeing the light until it bears N. 17 E. true.

(The above-mentioned visibility is based on a height of 35 feet from the ship's bridge.)

JAY J. MORROW,
Governor.

Notice to Mariners.—Aids to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 11, 1922.

Capt. J. E. Stone of the American steamship *General O. H. Ernst* reports the following information received from the Captain of the Port of Buenaventura, Colombia:

LOCATION OF THE FIVE LUMINOUS BUOYS LOCATED IN THE BUENAVENTURA BAY.

DEPARTURE.

First buoy.—Red light, S. 15 W. M.; placed in 7 fathoms of water, $\frac{1}{2}$ of a mile away from the pier; should be left to port side.

Second buoy.—White light, in front of Limones Point (Thotmes banks), location, S. 15 W. M., $1\frac{1}{2}$ miles away from the first; placed in 6 fathoms; should be left to starboard side.

Third buoy.—White light; it marks a bank of 3 fathoms in a direction S. 58 W. M. It is $2\frac{1}{2}$ miles away from the second buoy, and is placed in 5 fathoms of water. Should be left to starboard side.

Fourth buoy.—Red light, location S. 60 W. M. It is 3 miles away from the third. It is placed in 10 fathoms of water, clear passage to port side and starboard side.

Fifth buoy.—White light, San Pablo bank (Morro of the same name), location S. 70 W. M., it is $4\frac{1}{2}$ miles away from the fourth buoy; it is placed in 5 fathoms of water.

ENTRANCE.

The same indications with the natural inversion of the course.

The Inspector of the Customs,
Manuel Sinisterra.

BUENAVENTURA, March, 1922.
The Captain of the Port,
Manuel S. Caicedo.

The visibility of these buoy lights is about 6 miles, flashing at intervals of 3 seconds. These are the same buoys reported in Notice to Mariners, Panama Canal, of March 9, 1922.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended May 10:

Steamship *Ginyo Maru*, repairs to fire line.

PREVIOUSLY REPORTED.

Motor ship *Rosana*, open up engines; remove pistons, manufacture 42 piston rings and install, weld, and machine broken piston skirt; rebush 6 crosshead pins and manufacture pump springs; dredge *No. 86*, renew main deck house sills and deck; renew upper fender plank shear; renew 70 feet of upper deck sills and deck; renew ice box; build new gantry frames; change round spud wells to square; remove and replace deck machinery in wake of repairs; install new ladder brake wheel, redeck and calk galley floor; scale deck plates in way of replacement of wood decks; tug *Favorite*, convert from coal burner to oil burner.

The following vessels were at the Cristobal shops for repairs during the week ended May 15:

Steamships *City of Yokohama*, repair and renew copper oil pipe; *Toco*, manufacture 8 iron lock nuts and 1 spanner; make 1 cast-iron 5-inch T piece with 10-inch flanges and 1 blank flange; cut 5-inch pipe and fit to flange; *Loch Katrine*, furnish 6 brass tubes and 1 Muntz metal bar; *Cordelia*, manufacture crosshead for fuel pump; *Mantaro*, electric weld hawse pipe; *Colon*, renew $2\frac{1}{2}$ " suction pipe for tank in fireroom; calk saloon deck; scale between-deck space; *Parismina*, repair main brine pipe; *San Juan*, repair hoister; *Manavi*, engine repairs; electric weld boiler manhole, door flange; repair boiler guard plates; test boiler; make 2 glands for ash hoist; fit valve on exhaust pipe line; remake main engine reduction pipe joints; machine atmospheric valve and seat; overhaul steering engine exhaust cock; skim up electric engine piston rod and fit new neck and gland bushes.

Postal and Cable Addresses of The Panama Canal.

The postal address is "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Importation of Birds and Animals into the United States.

The Chief Quarantine Officer authorizes the following:

The Quarantine Division is in receipt from time to time of inquiries regarding the importation of birds and animals into the United States, and in order that the general public may have accurate information in regard to the matter, data on the subject have been secured from the United States Department of Agriculture. The regulations and laws covering these subjects are on file at the office of the Chief Quarantine Officer and may be seen there by any interested person. Those contemplating the shipment of horses, cattle, sheep, goats, swine, and wild animals should consult this file. The law in regard to this matter may be summarized as follows:

The importation of certain birds, and such other birds and animals as the Secretary of Agriculture may from time to time declare to be injurious to the interests of agriculture or horticulture, is prohibited, but natural history specimens for museums or scientific collections, or cage birds, such as domesticated canaries, parrots, and such other birds as the Secretary of Agriculture may designate, may be imported.

All packages containing the dead bodies or plumage or parts thereof, of game animals or game or other wild birds, must be plainly and clearly marked with name and address of shipper and note of contents. The importation of aigrettes, egret plumes, or so-called osprey plumes is absolutely prohibited.

Evasion or violation of any portion of this law is punishable by fine.

All dogs imported into the United States from any part of the world except the countries of North America are subject to inspection by the Bureau of Animal Industry, and such animal or animals, except the smaller breeds classed as house dogs, may, in the discretion of the inspector, be handled as prescribed for collie, shepherd, or sheep dogs. All collie, shepherd, or sheep dogs shall be subject to quarantine for a period not to exceed two weeks or until it can be determined as to whether such dogs are the hosts of the tapeworm.

Other animals and birds may be entered at ports in the United States under permit from the Bureau of Biological Survey. Application blanks for such permits may be secured from the Chief Quarantine Officer. Six birds or less may be imported without the formality of a permit, if included in the declaration of passenger's baggage. In case it is impracticable to obtain a permit in advance of shipment, application may be made by wire on arrival at port of entry, and if application is approved only a few hours delay will result.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective May 15, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.27
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	3.50
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.40
Oil, burning.....	Gal.	1.06
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.50
Oil, engine, gas, heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in cases.....	Gal.	.50
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.50
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.56
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.15
Paint, zinc, white, in oil.....	Lb.	.12½
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.14
Waste, cotton, white.....	Lb.	.15

Official Circular.

Sailings of the "Cristobal."

PANAMA RAILROAD COMPANY,
PANAMA RAILROAD STEAMSHIP LINE,
BALBOA HEIGHTS, C. Z., May 4, 1922.

To all concerned—Referring to my circular of April 20, advising that the steamship *Cristobal* would probably only make one more voyage to the Isthmus in the near future, sailing from Cristobal for Norfolk, Va., on Monday, May 22, at 3 p. m., we wish now to advise that this steamer will make an additional trip in June, sailing from Norfolk for Cristobal about June 2, and from Cristobal for Norfolk about June 13, definite sailing date to be announced later.

W. F. FOSTER,
Acting Superintendent.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity, as fast as the ships can take it. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton; but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;
(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

Typewriters For Sale.

The Supply Department has on sale a limited number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, Supply Department, Administration Building, Balboa Heights.

Binders for The Panama Canal Record.

Cardboard covers, punched and fitted with brass fasteners, forming binders for THE PANAMA CANAL RECORD, are offered for sale at 25 cents a set, for the benefit of those who wish to keep a file of the issues for ready reference. Orders may be addressed to The Panama Canal, Balboa Heights, Canal Zone, or The Panama Canal, Washington, D. C.

Sale of Cattle.

Grade Holstein bull calves 1 to 3 months old from registered sires. Also grade Hereford and Durham bulls and heifers 6 months to 2 years old. Sales will be made upon first satisfactory offer. For further information inquire Superintendent, Cattle Industry, Room 269, Administration Building, Balboa Heights.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster, The Panama Canal, Balboa Heights, C. Z.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., May 24, 1922.

No. 41.

CANAL WORK IN APRIL.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of April, 1922:

BALBOA HEIGHTS, C. Z., May 18, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of April, 1922:

CANAL TRAFFIC.

The total number of vessels and craft of all kinds transiting the Canal during the month of April, 1922, as compared with the preceding month and with the corresponding month of last year, was as follows:

	April, 1922.	March, 1922.	April, 1921.
Commercial vessels.....	230	234	227
Noncommercial vessels.....	14	15	27
Launches, etc. (under 10 tons measurement).....	9	4	9
Total vessels and craft through Canal.....	253	253	263

In addition to the foregoing, Panama Canal equipment, consisting of floating cranes, barges, craneboats, graders, etc., was passed through the locks in April as follows:

	North-bound.	South-bound.	Total.
Gatun.....	14	10	24
Pedro Miguel.....	32	34	66
Miraflores.....	38	31	69

COMMERCIAL TRAFFIC.¹

Comparative Traffic Statistics.

The following tabulations permit a ready comparison of commercial traffic through the Panama Canal during the month of April, 1922, with that of preceding months, along the lines indicated at the head of the various tables:

TONNAGE, TOLLS, AND CARGO CARRIED.

	April, 1922.	March, 1922.	April, 1921.	Average month for past year.
United States equivalent net tonnage.....	771,932	786,759	771,116	742,259
Panama Canal net tonnage.....	974,833	975,811	955,503	918,391
Registered gross tonnage.....	1,219,338	1,226,971	1,203,087	1,156,058
Registered net tonnage.....	772,828	776,034	757,576	736,709
Tolls.....	\$953,256 11	\$956,726 76	\$927,977 09	\$901,087 71
Cargo.....	1,046,047	960,089	907,613	841,496

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Statistics on vessels not paying tolls are shown under "noncommercial traffic."

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED PER VESSEL.

	April, 1922.	March, 1922.	April, 1921.
United States equivalent net tonnage.....	3,356	3,362	3,397
Panama Canal net tonnage.....	4,238	4,170	4,209
Registered gross tonnage.....	5,301	5,243	5,299
Registered net tonnage.....	3,360	3,316	3,337
Tolls.....	\$4,144.59	\$4,088.57	\$4,088.01
Tons of cargo (including vessels in ballast).....	4,588	4,103	3,998
Tons of cargo (laden vessels only).....	4,755	4,424	4,561

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
April.....	19	92,033	\$94,185.00	94,484	14	68,368	\$65,523.74	59,306
May.....	19	82,257	84,545.85	90,617	16	75,593	72,813.55	93,242
June.....	17	96,199	94,577.11	68,809	11	53,986	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134
January, 1922.....	28	138,928	141,404.35	119,413	20	108,921	111,440.00	86,862
February.....	25	117,512	116,235.50	94,548	19	89,862	84,133.82	84,330
March.....	34	162,572	161,738.65	141,648	25	128,988	124,465.78	123,657
April.....	24	114,283	110,272.10	137,207	26	131,193	130,010.00	118,662

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
April.....	13	61,176	\$61,590.00	60,231	12	56,049	\$53,162.18	52,908
May.....	9	39,614	40,180.00	48,489	21	97,257	92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,593	14	61,980	62,318.75	79,129
November.....	12	74,635	71,525.74	44,976	5	29,949	29,127.50	28,865
December.....	9	47,604	46,318.75	44,101	6	32,957	32,803.75	28,784
January, 1922.....	6	34,546	34,756.25	23,575	7	31,550	30,646.95	28,831
February.....	8	39,168	36,706.25	49,424	6	32,909	31,538.75	21,119
March.....	16	84,766	86,531.95	90,633	9	51,848	46,734.40	37,310
April.....	7	35,406	35,006.25	51,244	9	49,140	50,900.85	43,783

ORIGIN AND DESTINATION OF TONNAGE.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past 12 months, the figures representing the Panama Canal net tonnage:

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscel- laneous.	Total.
1921.						
April...	261,497	131,840	46,289	21,846	31,034	492,506
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	260,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,669
1922.						
January.....	279,870	153,315	30,271	18,398	31,910	513,764
February.....	273,996	146,572	30,477	19,061	17,899	488,005
March.....	382,213	144,630	17,223	21,389	20,586	586,041
April.....	305,725	138,836	15,443	17,508	43,176	520,688
Average month for past year.....	276,115	153,384	26,945	21,043	23,914	501,401

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DESTINATION OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
1921.						
April.....	141,584	135,622	131,637	64,155	19,508	492,506
May.....	125,091	103,143	82,499	82,582	21,114	414,429
June.....	143,217	106,369	83,063	46,298	36,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,486	70,551	50,719	487,219
September.....	268,758	90,105	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,615	115,980	136,940	84,391	49,743	575,669
1922.						
January.....	170,927	112,160	100,878	83,526	46,273	513,764
February.....	151,388	107,476	107,197	94,271	27,673	488,005
March.....	195,833	105,532	149,697	83,107	51,872	586,041
April.....	145,819	121,973	121,594	81,436	49,866	520,688
Average month for past year.....	186,743	101,243	102,180	72,317	38,918	501,401

ORIGIN OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
1921.						
April.....	139,495	168,585	29,756	85,560	38,601	462,997
May.....	174,128	137,258	12,407	81,086	45,309	450,188
June.....	116,521	112,474	18,740	75,400	23,040	346,175
July.....	174,412	99,745	41,084	70,124	22,197	407,562
August.....	229,629	110,248	20,628	68,661	48,894	478,067
September.....	218,453	84,212	14,762	30,814	46,262	394,503
October.....	252,645	124,560	37,720	41,436	42,018	498,379
November.....	189,942	126,381	23,556	6,581	56,934	403,394
December.....	195,969	135,952	28,194	39,616	41,844	441,575
1922.						
January.....	152,992	100,224	16,860	27,172	35,504	332,752
February.....	142,693	110,778	21,594	42,950	80,515	398,530
March.....	175,669	104,847	15,008	48,575	45,671	389,770
April.....	182,496	124,842	31,969	75,485	39,353	454,145
Average month for past year.....	183,796	114,293	23,544	50,658	43,962	416,253

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscel- laneous.	Total.
1921.						
April.....	189,209	197,311	53,334	22,643	1,100	462,997
May.....	201,548	140,940	73,705	21,549	12,446	450,188
June.....	155,147	136,292	18,324	26,112	10,300	346,175
July.....	205,690	134,047	23,123	28,770	15,932	407,562
August.....	231,830	194,279	27,256	22,022	2,670	478,057
September.....	204,820	140,555	26,478	17,114	5,536	394,503
October.....	259,613	170,189	18,222	30,955	19,400	498,379
November.....	196,974	164,345	20,446	16,760	4,869	403,394
December.....	191,277	192,575	25,550	21,739	10,434	441,575
1922.						
January.....	115,392	168,337	26,831	16,489	5,703	332,752
February.....	163,919	172,900	31,767	18,242	11,702	398,530
March.....	134,687	193,267	34,969	18,724	8,123	389,770
April.....	169,493	242,087	6,615	20,266	15,684	454,145
Average month for past year.....	185,866	170,818	27,774	21,562	10,233	416,253

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of April, 1922, of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year.

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe.....		8.8		9.4
East coast of United States.....	41.7		10.7	
East coast of Mexico.....		76.2		42.7
Cristobal, C. Z.....	53.2			16.8
West coast of United States.....		21.9		7
West coast of South America.....	20.4		9.2	
Australasia.....	12.6		49.0	
Far East.....	19.0		35.8	

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for the month of April, 1922, was published in THE PANAMA CANAL RECORD under date of May 10, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes for the month of April, 1922, as compared with the preceding month, and with the corresponding month of last year.

Vessels plying between—	Atlantic to Pacific.			Pacific to Atlantic.		
	April, 1922.	March, 1922.	April, 1921.	April, 1922.	March, 1922.	April, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise ports.....	24	34	19	26	25	14
United States and Far East.....	19	26	12	6	3	6
Europe and United States.....	6	6	5	7	7	9
United States and South America.....	18	14	14	17	11	24
Europe and South America.....	9	9	12	11	11	10
Cristobal and South America.....	8	7	10	10	8	10
Europe and Australasia.....	8	9	8	9	8	12
United States and Australasia.....	2	5	9	3		1
Europe and Canada.....	1	3	3	4	3	3
Mexico and United States.....			2		2	5
Mexico and South America.....	2	2	5		4	4
Miscellaneous.....	24	23	19	16	14	11
Totals.....	121	138	118	109	96	109
	Panama Canal net tonnage.			Panama Canal net tonnage.		
	April, 1922.	March, 1922.	April, 1921.	April, 1922.	March, 1922.	April, 1921.
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise ports.....	114,283	162,572	92,033	131,193	128,988	68,368
United States and Far East.....	97,507	128,520	65,424	31,969	15,008	29,756
Europe and United States.....	31,536	26,581	24,706	39,681	33,071	40,491
United States and South America.....	55,628	43,265	46,937	60,000	28,413	83,069
Europe and South America.....	38,702	39,648	46,786	46,008	41,307	47,192
Cristobal and South America.....	13,518	12,543	14,021	18,060	12,552	16,677
Europe and Australasia.....	57,728	54,848	51,238	56,130	44,483	81,786
United States and Australasia.....	13,513	28,259	48,315	13,861		4,774
Europe and Canada.....	6,334	18,032	9,110	19,019	15,826	16,267
Mexico and United States.....			10,903		9,854	26,880
Mexico and South America.....	10,132	10,076	25,777		19,788	21,025
Miscellaneous.....	81,807	61,697	57,256	38,224	40,480	26,712
Totals.....	520,688	586,041	492,506	454,145	389,770	462,997
	Panama Canal net tonnage.			Panama Canal net tonnage.		
	April, 1922.	March, 1922.	April, 1921.	April, 1922.	March, 1922.	April, 1921.
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise ports.....	137,207	141,648	94,484	118,622	123,657	59,366
United States and Far East.....	151,230	192,249	80,674	33,874	18,913	11,303
Europe and United States.....	29,054	22,735	10,284	55,368	54,268	63,763
United States and South America.....	46,155	25,879	45,949	89,037	29,098	90,765
Europe and South America.....	28,887	17,545	24,944	56,119	45,998	68,516
Cristobal and South America.....	3,026	3,441	3,908	6,486	3,813	5,356
Europe and Australasia.....	32,815	35,505	31,792	50,182	45,210	69,692
United States and Australasia.....	16,615	29,780	65,621	10,332		5,420
Europe and Canada.....	3,900	21,692	5,413	29,370	24,556	22,827
Mexico and United States.....			20,500			955
Mexico and South America.....	19,600	19,100	46,368			
Miscellaneous.....	93,944	72,378	71,864	34,224	32,624	16,909
Totals.....	562,433	581,952	500,801	483,614	378,137	406,812

TOLLS.

Under the present dual method of assessing tolls, the revenue from this source was \$927,977.09. Had the net tonnage as determined by the Panama Canal rules of

measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$213,793.57. These additional tolls would have been contributed by nationality of vessels as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$39,222.45	\$21,124.15	\$60,346.60
Chilean.....	2,990.00	4,671.35	7,661.35
Danish.....	3,382.80	1,350.75	4,733.55
Dutch.....	5,883.75	3,867.75	9,751.50
French.....		475.20	475.20
German.....	627.30	2,565.85	3,193.15
Japanese.....	6,274.50	3,166.05	9,440.55
Norwegian.....	3,534.44	2,596.25	6,130.69
Peruvian.....	3,308.45	4,666.63	7,975.10
Swedish.....	2,071.55	2,387.10	4,458.65
United States.....	46,500.58	53,126.65	99,627.23
Totals.....	113,795.82	99,997.75	213,793.57

The additional tolls which would have been assessed against United States vessels would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$25,356.15	\$30,297.70	\$55,653.85
United States and Canal Zone ports.....	166.05	364.10	530.15
United States and United States possessions.....	2,443.75	5,439.05	7,882.80
United States and foreign ports.....	16,380.10	15,637.00	32,017.10
Between foreign ports.....	2,154.53	1,388.80	3,543.33
Totals.....	46,500.58	53,126.65	99,627.23

Of the \$213,793.57 additional revenue that would have been collected by using the Panama Canal rules of measurement exclusively, \$8,644.80 represents the additional tolls that would have been collected on account of deck cargo.

AVERAGE TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate of such tolls per cargo ton varying in different vessels and in vessels of different nationalities with the ratio of cargo tonnage to net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of April, 1922, by nationality of vessels.

	Atlantic to Pacific.	Pacific to Atlantic.	General average.
British.....	\$1.02	\$0.99	\$1.01
Chilean.....	1.52	3.61	2.33
Danish.....	.91	.62	.79
Dutch.....	.80	.72	.76
French.....	1.50	.76	.91
German.....	1.27	.66	.80
Japanese.....	.67	.90	.75
Norwegian.....	.78	.61	.74
Peruvian.....	3.67	.88	1.27
Swedish.....	.62	.51	.55
United States.....	.79	.92	.85
Average rate for all vessels, April, 1922.....	.86	.91	.89
Average rate for all vessels, March, 1922.....	.99	.99	.99
Average rate for all vessels, April, 1921.....	.98	1.07	1.02

COMMODITY STATISTICS.

A classification of cargo passing through the Panama Canal during the month of April, 1922, has been compiled from declarations of cargo and manifests submitted by the ships' masters, and while incomplete, it is indicative of the kind and quantity

of the various commodities carried by vessels transiting the Canal. From the cargo declarations and manifests submitted it was possible to classify by commodities 66 per cent of all cargo passing from the Atlantic to the Pacific, and 93 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith.

Commodity.	April, 1922.	March, 1922.	April, 1921.
<i>Atlantic to Pacific.</i>			
Manufactured goods:			
Iron and steel.....	94,160	130,906	78,645
Railroad material.....	24,090	10,746	7,569
Machinery.....	6,179	8,792	8,600
Textiles, etc.....	5,431	5,864	7,200
Oils:			
Refined.....	36,854	32,679	48,126
Crude.....	29,834	41,504	112,257
Lubricating.....	5,404	3,377	
Linseed.....	1,629	785	
Coal and coke.....	56,414	50,487	39,915
Sugar.....	41,173	41,012	25,216
Metals:			
Tin.....	8,769	17,090	8,950
Copper.....	2,238	1,430	79
Iron.....	1,847	8,808	3,247
Fertilizers.....	5,373		
Cement.....	4,762	4,364	5,412
Glass and glassware.....	3,536	3,334	3,519
Paper.....	3,311	2,543	1,448
Coffee.....	3,202	377	3,476
Cotton.....	2,412	7,507	2,692
Phosphates.....	1,515	155	503
Ammonia.....	1,393	6,716	
Liquors.....	1,149	1,124	1,265
Tobacco.....	973	4,683	3,880
Other and general.....	220,785	197,669	138,802
Totals.....	562,433	581,952	500,801
<i>Pacific to Atlantic.</i>			
Lumber.....	102,194	74,432	23,339
Nitrate.....	79,325	22,231	118,729
Wheat.....	53,378	23,212	39,108
Sugar.....	23,568	6,386	8,379
Wool.....	21,932	20,581	16,384
Barley.....	19,360	7,362	12,152
Cold storage and food products:			
Beef.....	1,243	6,906	6,878
Butter.....	2,304	2,381	6,440
Cheese.....	2,264	2,086	6,901
Mutton.....	12,097	7,644	12,246
Tallow.....	2,500	839	2,564
Canned goods:			
Fish.....	4,964	12,855	3,735
Fruit.....	10,024	20,544	6,227
Other.....	1,318	1,535	3,544
Metals:			
Copper.....	11,388	9,942	12,494
Lead.....	4,480	4,659	766
Other.....	548	3,621	208
Oils:			
Crude.....	10,177	8,907	
Coconut.....	3,584	1,156	
Other.....	1,684	22,212	22,030
Ores:			
Copper.....	7,439	2,719	8,259
Tin.....	3,816	1,116	1,309
Other.....	215	357	5,184
Coffee.....	12,350	16,210	7,754
Flour.....	9,245	3,147	17,549
Cacao.....	4,910	2,518	1,279
Fruit:			
Fresh.....	2,484	1,021	1,442
Dried.....	4,582	6,214	1,301
Oats.....	4,029	938	297
Beans, peas, lentils, etc.....	3,465	7,616	1,622
Borax.....	3,424	3,101	1,004
Skins and hides.....	3,253	2,488	688
Copra.....	3,059	5,936	3,629
Rice.....	2,944	801	20
Cotton.....	2,801	4,837	633
Ivory.....	1,458	1,527	988
Other and general.....	45,808	58,100	51,670
Totals.....	483,614	378,137	406,812

CLASSIFICATION OF COMMERCIAL TRAFFIC BY NATIONALITY, APRIL, 1922.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific.							
British.....	42	143,499	182,746	230,353	143,671	\$177,887.07	162,340
Chilean.....	3	5,081	7,767	10,127	6,001	6,330.40	4,160
Danish.....	3	9,840	13,069	15,451	9,838	12,300.00	13,588
Dutch.....	4	13,869	19,320	22,298	13,589	17,336.25	21,668
French.....	1	4,326	4,363	5,993	3,743	5,235.60	3,482
German.....	1	4,446	5,154	7,056	4,493	5,557.50	4,360
Japanese.....	8	29,943	36,270	46,506	29,521	37,249.50	55,907
Norwegian.....	8	17,732	20,594	27,705	17,213	21,435.16	27,340
Peruvian.....	2	2,495	5,356	8,049	4,187	3,118.75	849
Swedish.....	2	4,097	5,994	6,837	5,054	5,121.25	8,297
United States.....	47	174,078	220,055	269,770	172,956	213,747.98	260,442
Totals, April, 1922.....	121	409,406	520,688	650,055	410,266	505,319.46	562,433
Totals, March, 1922.....	138	472,020	586,041	724,316	461,154	580,374.55	581,952
Totals, April, 1921.....	118	397,568	492,506	615,818	391,141	490,505.91	500,801
From Pacific to Atlantic.							
British.....	36	113,768	135,755	173,118	109,020	138,506.57	134,829
Chilean.....	4	7,637	11,848	16,302	9,174	9,546.25	2,647
Danish.....	1	4,473	5,588	7,014	4,470	5,591.25	9,004
Dutch.....	3	10,149	13,331	16,468	10,858	12,686.25	17,546
French.....	2	8,083	8,861	10,496	5,593	9,988.80	13,172
German.....	2	7,483	9,933	11,971	7,554	9,353.75	14,200
Japanese.....	5	20,817	24,017	30,945	20,492	25,657.95	28,451
Norwegian.....	3	4,091	6,425	6,784	4,069	5,113.75	8,377
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	5,249
Swedish.....	2	4,770	6,932	7,811	5,808	5,962.50	11,719
United States.....	48	177,556	223,913	275,922	178,247	220,905.83	238,420
Totals, April, 1922.....	109	362,526	454,145	569,283	362,562	447,936.65	483,614
Totals, March, 1922.....	96	314,739	389,770	502,655	314,880	376,352.21	378,137
Totals, April, 1921.....	109	373,548	462,997	587,269	366,435	437,471.18	406,812
Combined traffic both ways.							
British.....	78	257,267	318,501	403,471	252,691	316,393.64	297,169
Chilean.....	7	12,718	19,615	26,429	15,175	15,876.65	6,807
Danish.....	4	14,313	18,657	22,465	14,308	17,891.25	22,592
Dutch.....	7	24,018	32,651	38,766	24,447	30,022.50	39,214
French.....	3	12,409	13,024	16,399	10,336	15,224.40	16,654
German.....	3	11,929	15,087	19,027	12,047	14,911.25	18,560
Japanese.....	13	50,760	60,287	77,451	50,013	62,907.45	84,358
Norwegian.....	11	21,823	27,019	34,489	21,282	26,548.91	35,717
Peruvian.....	5	6,194	13,098	20,501	10,464	7,742.50	6,098
Swedish.....	4	8,867	12,926	14,648	10,862	11,083.75	20,016
United States.....	95	351,634	443,968	545,692	351,203	434,653.81	498,862
Totals, April, 1922.....	230	771,932	974,833	1,219,338	772,828	953,256.11	1,046,047
Totals, March, 1922.....	234	786,759	975,811	1,226,971	776,034	956,726.76	960,089
Totals, April, 1921.....	227	771,116	955,503	1,230,087	757,576	927,977.09	907,613

LATIN-AMERICAN TRAFFIC.

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
United States.....	13	40,773	49,134	63,731	40,541	\$47,980.38	44,111
British.....	21	62,154	75,176	98,379	61,809	75,997.97	70,274
Norwegian.....	6	10,495	12,414	16,497	10,266	12,388.91	11,556
Chilean.....	3	5,081	7,767	10,127	6,001	6,330.40	4,160
Peruvian.....	2	2,495	5,356	8,049	4,187	3,118.75	849
Danish.....	2	6,596	9,053	10,232	6,501	8,245.00	9,213
Japanese.....	3	9,425	11,577	14,897	9,352	11,781.25	16,757
Swedish.....	1	1,349	1,458	2,316	1,630	1,686.25	1,130
Dutch.....	2	4,399	7,452	7,107	4,396	5,498.75	4,220
German.....	1	4,446	5,154	7,056	4,493	5,557.50	4,360
Totals, April, 1922.....	54	147,213	184,541	238,391	149,176	178,585.16	166,630
Totals, March, 1922.....	50	120,157	152,845	195,943	120,607	144,979.14	121,290
Totals, April, 1921.....	58	147,700	188,679	241,751	151,087	182,232.50	197,113

PACIFIC TO ATLANTIC.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
United States.....	11	30,763	37,445	49,375	30,929	\$37,990.18	55,819
British.....	22	45,071	58,826	75,012	45,699	54,317.26	65,755
Norwegian.....	3	4,091	6,425	6,784	4,069	5,113.75	8,377
Chilean.....	4	7,637	11,848	16,302	9,174	9,546.25	2,647
Peruvian.....	3	3,699	7,742	12,452	6,277	4,623.75	5,249
Swedish.....	1	1,340	1,399	2,257	1,583	1,675.00	2,675
Dutch.....	1	2,494	3,195	4,385	3,195	3,117.50	2,175
German.....	2	7,483	9,933	11,971	7,554	9,353.75	14,200
French.....	1	3,600	4,146	5,765	3,681	4,500.00	6,450
Totals, April, 1922.....	48	106,178	140,959	184,303	112,161	130,237.44	163,347
Totals, March, 1922.....	45	102,092	127,444	171,129	104,701	114,722.68	87,163
Totals, April, 1921.....	62	173,766	212,587	280,957	173,393	192,143.57	160,873

A further classification of the commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	114	495,420	\$484,720.45	105	445,660	\$441,827.45
Ballast.....	5	16,864	12,155.82	3	8,333	5,999.76
Tug.....	1	152	109.44	1	152	109.44
Passenger ship.....	1	8,252	8,333.75			
Totals.....	121	520,688	505,319.46	109	454,145	447,936.65
Steamships.....	112	494,031	479,715.42	104	442,728	437,303.01
Motor ships.....	5	24,303	22,867.50	2	11,121	10,366.70
Motor schooners.....	2	144	157.50	2	144	157.50
Sailing vessel.....	1	2,058	2,469.60			
Tug.....	1	152	109.44	1	152	109.44
Totals.....	121	520,688	505,319.46	109	454,145	447,936.65

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships and other noncargo-carrying vessels, is shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	1	4,459	\$3,210.48	1	1,304	\$938.88
Norwegian.....	1	1,762	1,280.16			
United States.....	3	10,643	7,665.18	2	7,029	5,060.88
Totals.....	5	16,864	12,155.82	3	8,333	5,999.76

NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Panama Canal free of tolls during the month of April, 1922. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Panama Canal; these, although paying tolls, are not included in the commercial traffic.

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
United States naval vessels:						
Transport.....	1	3,050	\$3,812.50			
Supply ships.....	2	7,814	9,767.50			
Cruisers.....	1	3,200	1,600.00	2	6,950	\$3,475.00
Tugs.....	1	1,000	500.00	2	2,000	1,000.00
United States Army vessels, transports.....				3	11,757	14,696.25
Commercial, for repairs.....	1	3,524	2,815.00	1	6,970	8,122.50
Launches.....	8	43	36.35	1	2	1.50
Totals.....	14		18,531.35	9		27,295.25

¹ Registered net tonnage.² Displacement tonnage.³ Panama Canal net tonnage.

The vessels listed above, as transiting the Canal free of tolls, carried cargo as follows:

Atlantic to Pacific.....	Tons.
Pacific to Atlantic.....	19,253
	12,372

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of April, 1922, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving..... tons	39,311	11,161	50,472
Local cargo shipped..... tons	1,914		1,914
Transit cargo arriving..... tons	1,073,748	1,064,904	2,138,652
Transit cargo clearing..... tons	1,072,583	1,087,209	2,159,792
Cargo received for transshipment..... tons	28,459	1,872	30,331
Cargo transhipped..... tons	28,337	1,731	30,068
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	49	22	71
Panama Railroad vessels.....	5		5
United States Army vessel.....	1		1
Total vessels supplied with bunker coal.....	55	22	77
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons	17,526	7,300	24,826
Panama Railroad vessels..... tons	831		831
United States Army vessel..... tons	1		1
Total coal supplied to vessels..... tons	18,358	7,300	25,658
Coal issues, miscellaneous:			
Panama Canal departments..... tons	330	34	364
Panama Railroad Company..... tons	27	11	38
United States Army, excepting vessels..... tons	290		290
Individuals and companies..... tons	337		337
Miscellaneous issues, total..... tons	984	45	1,029
Total issues from Panama Canal deposits:			
April, 1922..... tons	19,342	7,345	26,687
March, 1922..... tons	20,969	2,822	23,791
April, 1921..... tons	29,353	2,461	31,814
Coal on hand, May 1, 1922..... tons	133,395	17,194	150,589
Coal on hand, April 1, 1922..... tons	131,336	24,539	155,875
Coal received during the month..... tons	21,401		21,401
<i>United States Navy coal account.</i>			
Issued to United States Navy, including vessels..... tons	1,859		1,859
Received during the month..... tons	8		8
Coal on hand, May 1, 1922..... tons	57,159	15,186	72,345
Coal on hand, April 1, 1922..... tons	59,010	15,186	74,196
Fuel oil issues:			
Panama Canal departments..... bbls	3,972	17,647	21,619
Panama Railroad..... bbls	494	153	647
Army and Navy..... bbls	1,097		1,097
Individuals and companies..... bbls		15	15
Total issues and sales..... bbls	5,563	17,815	23,378
Fuel oil on hand, May 1, 1922..... bbls	31,890	59,565	91,455
Fuel oil on hand, April 1, 1922..... bbls	37,453	77,380	114,833

		Cristobal.	Balboa.	Total.
Diesel oil issued during April, 1922.....	bbls	33	20	53
Diesel oil on hand, May 1, 1922.....	bbls	50,731	895	51,626
Diesel oil on hand, April 1, 1922.....	bbls	50,764	915	51,679
Oil pumped for individuals and companies.....	bbls	425,663	116,295	541,958
Miscellaneous transfers.....	bbls	5,421	1,619	7,040
Total oil handled.....	bbls	436,680	135,749	572,429
Admeasurement certificates:				
United States equivalent issued or made.....		23	2	25
Measured for Panama Canal net tonnage.....		4		4
Remeasured for Panama Canal net tonnage.....		15	4	19
Panama Canal net tonnage corrected.....		16	4	20
United States equivalent tonnage corrected.....		10	9	19
Services of harbor equipment:				
Tugs, total operating hours.....		401	567	968
Scows, total operating hours.....			135	135
Launches, total operating hours.....		1,149	1,205	2,354
Vessels repaired at Panama Canal shops:				
Commercial.....		29	24	53
Government.....		8	4	12
Canal equipment.....			17	17
Vessels dry-docked:				
Commercial.....		3	5	8
Government.....			1	1
Canal equipment.....			2	
Clearances issued.....		159	133	292
Bills of health issued.....		152	133	285

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal:

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
Ships entering.						
All vessels, including those transiting Canal.....	291	1,533,854	969,533	244	1,282,856	808,589
Vessels entering the port but not transiting Canal.....	59	268,903	164,575	6	13,983	8,499
Vessels transiting the Canal and handling passengers or cargo.....	59	270,251	166,231	46	186,183	110,211
Ships clearing.						
All vessels, including those transiting Canal.....	289	1,543,434	973,758	247	1,328,532	852,652
Vessels entering port but not transiting the Canal.....	62	294,380	180,799	8	47,021	41,521
Vessels transiting the Canal and handling passengers or cargo.....	53	244,285	150,141	45	181,312	107,161

MOVEMENT OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of April, 1922:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.....	892	901	1,793	5		5
From Pacific ports.....	229	67	296	219	44	263
Total disembarking.....	1,121	968	2,089	224	44	268
Embarking:						
For Atlantic ports.....	1,253	532	1,785	7	3	10
For Pacific ports.....	175	57	232	48	22	70
Total embarking.....	1,428	589	2,017	55	25	80

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Remaining on board vessels:						
From Atlantic to Pacific ports.....	490	1,090	1,580	570	2,105	2,675
From Pacific to Atlantic ports.....	1,036	1,103	2,139	1,309	1,352	2,661
From Atlantic to Atlantic ports.....	297	90	387			
From Pacific to Pacific ports.....				2		2
Total remaining on board.....	1,823	2,283	4,106	1,881	3,457	5,338
Total passengers arriving.....	2,944	3,251	6,195	2,105	3,501	5,606
Total passengers departing.....	3,251	2,872	6,123	1,936	3,482	5,418

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of April, 1922:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to—						
U. S. Government vessels.....	\$172.00	\$132.68	\$2,411.35		\$354.50	\$2,970.53
Panama Railroad vessels.....	34.50	762.06	4,270.71		400.18	5,467.45
Other commercial vessels.....	1,338.63	3,245.47	14,327.17		1,005.59	19,966.86
Totals, April, 1922.....	1,545.13	4,140.21	21,009.23		1,710.27	28,404.84
Totals, March, 1922.....	1,255.62	5,921.65	19,017.93		1,418.64	27,613.84
Totals, April, 1921.....	3,395.20	5,812.02	34,038.52	\$5,577.43	2,394.92	51,218.09
Sales at Balboa to—						
U. S. Government vessels.....	193.50	587.85	5,637.68	13.36	78.10	6,510.49
Other commercial vessels.....	462.83	2,113.00	9,385.77	1,000.37	716.60	13,678.57
Totals, April, 1922.....	656.33	2,700.85	15,023.45	1,013.73	794.70	20,189.06
Totals, March, 1922.....	691.51	5,397.63	11,486.67	16.14	2,030.83	19,622.78
Totals, April, 1921.....	937.65	5,243.27	23,292.01	550.16	1,164.55	31,187.64

LOCK OPERATION.

The following tabulations give the number of lockages, number of vessels passing through the locks, and the consumption of water for lockages, for the month of April, 1922, as compared with the preceding month, and the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	105	117	222	8	5	13	235
Pedro Miguel.....	107	121	228	18	15	33	261
Miraflores.....	102	115	217	17	14	31	248
Total lockages, April, 1922.....	314	353	667	43	34	77	744
Total lockages, March, 1922.....	278	386	664	33	18	51	715
Total lockages, April, 1921.....	325	351	676	39	45	84	760

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	113	129	242	14	10	24	266
Pedro Miguel.....	111	123	234	32	34	66	300
Miraflores.....	111	123	234	38	31	69	303
Total vessels, April, 1922.....	335	375	710	84	75	159	869
Total vessels, March, 1922.....	293	420	713	70	67	137	850
Total vessels, April, 1921.....	339	373	712	110	109	219	931

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	13	13	13
Canal equipment.....	11	47	56
Total noncommercial.....	24	60	69

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	893,900,000	878,690,000	738,920,000
Leakage.....	20,000,000	17,700,000	20,600,000
Maintenance.....		19,000,000	10,700,000
Total consumption, April, 1922.....	913,900,000	915,390,000	769,620,000
Total consumption, March, 1922.....	907,670,000	831,680,000	730,408,000
Total consumption, April, 1921.....	911,560,000	837,920,000	822,850,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorological and hydrographic conditions over the Canal Zone and vicinity during the month of April, 1922, are shown in comparative form.

Rainfall.	April, 1922.	April, 1921.	April—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Total rainfall for month:					
Pacific Section.....	0.41	1.36	7.70	0.06	3.52
Central Section.....	0.47	1.82	9.12	.27	3.75
Atlantic Section.....	2.64	6.00	12.83	1.18	5.54
Maximum record on any one day.....	1.32	4.93	19.86		
Over Gatun Lake watershed.....	1.15	3.25	12.00	.87	4.33
Over Chagres River watershed above Alhajuela.....	2.02	3.65	16.06	.51	4.43
Maximum recorded for month at any one point.....	4.13	7.43	21.73		
Minimum recorded for month at any one point.....		0.43			
<i>Hydrography.</i>					
	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	834	540	3,140	304	1,041
Maximum momentary discharge for month.....	5,300	1,300	170,000		
Minimum momentary discharge for month.....	555	364			
Gatun Lake watershed total yield.....	1,178	1,105	6,263	328	1,960
Gatun Lake watershed net yield.....	210	244	5,400	—706	1,219
Draft on Gatun Lake for lockages and power.....	2,069	2,282	2,282	1,019	1,650

* Maximum rainfall recorded for 24 hours. Occurred December 28–29, 1909.

* Maximum momentary discharge of record. Occurred December 26, 1909.

* Not including April, 1914.

SEISMOLOGY.

No earthquakes were recorded on the Balboa Heights seismographs during the month.

ELECTRICAL DIVISION.

The combined gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., are shown in the following tabulation:

	April, 1922.	March, 1922.	April, 1921.
Gross output, K. W. H.:			
Gatun hydroelectric station.....	4,471,000	4,728,100	5,660,900
Miraflores steam plant.....	250	400	39,290
Combined gross output.....	4,471,250	4,728,500	5,700,190
Power distributed to consumers..... KWH	3,743,444	3,983,218	4,776,562
Loss of power in plant auxiliaries, transmission, and transformation..... KWH	727,806	745,282	923,628
Per cent of loss of power to gross output.....	16.27	15.76	16.20
Water consumption..... cubic feet	3,589,299,000	3,687,402,000	4,239,320,000
Oil consumption..... barrels	2,009	1,911	2,135

Miscellaneous electrical repairs and installations of electrical equipment were made on 20 vessels during the month. There were 257 work orders issued for work to be performed by the Electrical Division during the month, as compared with 274 for March, 1922.

SHOP, FOUNDRY, AND DRY DOCK WORK.

During the month, miscellaneous repairs were made on 37 vessels at Cristobal and 45 vessels at Balboa. Of these vessels, 3 were placed in dry dock at Cristobal and 8 at Balboa. The more important repair work was as follows: The Shipping Board vessel *Eastern Queen* was placed in dry dock on account of the shaft having come badly down through excessive wear of the *lignum-vitæ* in the stern bushing as a result of which the stern tube shaft was broken through the coupling flange. A new stern tube shaft was installed, and necessary repairs made to the stern bushing.

The U. S. S. *Birmingham* was placed in dry dock on account of a broken port propeller shaft. The shaft and propeller were removed and the stern tube shaft (which, in this ship, is additional to the propeller shaft) was removed for examination and the stern tube blanked so that the vessel may be available for service under one propeller pending the receipt of a new shaft for installation.

The steamship *Wolsun* was docked and repairs to her bow and bottom made in wake of the damages received in a collision and subsequent grounding on the Cristobal breakwater.

The steamship *W. J. Hanna* was dry-docked on account of a broken intermediate shaft and a new intermediate shaft and tail shaft installed.

Substantial progress was made on the conversion of the Panama Canal tug *Favorite* into an oil burner.

The output of the foundry in patterns and castings for the month of April, 1922, as compared with the preceding month, was as follows:

	April, 1922.			March, 1922.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	7	144	13,383	2	135	7,958
Steel.....	3	30	27,625	3	51	21,716
Nonferrous.....	4	86	1,803	2	129	2,549

The following is a statement of all job and blanket orders issued and completed during the month:

	Uncompleted, April 1.	Authorized in April.	Completed in April.	Uncompleted, April 30.
Job orders.....	228	387	360	255
Blanket orders.....	360	2	1	361

DREDGING DIVISION.

Cucaracha and Barge Repair slides have shown no movement during the month. At the West Culebra slide a general movement of material has existed, showing a movement of 7 feet for the month, between stations 1775-00 and 1780-00 W; and a movement of about 3 feet between 1780-00 and 1795-00 W. This change has been determined by a resurvey of the base line along this slide. There was no interference with Canal traffic during the month.

The total excavation for April, 1922, was 253,400 cubic feet of earth and rock, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment
	Earth.	Rock.			
65,500	30,800	34,700	Maintenance.....	<i>Gaillard Cut, East Culebra.</i> 1781-00 to 1802-25 E.....	<i>Gamboa.</i>
45,500	24,600	20,900	Maintenance.....	<i>Gaillard Cut, West Barge Repair.</i> 1744-75 to 1732-25 E. and W.....	<i>Gamboa.</i>
27,600	7,600	20,000	Maintenance.....	<i>Miraflores P. I., Pacific Entrance.</i> 2083-50 to 2095-00 W.....	<i>Paraiso.</i>
4,350		4,350	Maintenance.....	<i>Pacific Entrance.</i> 2180-00 to 2200-00 W.....	<i>Cascadas.</i>
4,650		4,650	Construction.....	2180-00 to 2200-00 W.....	<i>Cascadas.</i>
105,800	105,800		Maintenance.....	2314-00 to 2334-00 E.....	<i>No. 84.</i>
253,400	168,800	84,600			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	111,000
Dumped on flats west of Canal, Pacific entrance.....	10,800
Dumped on flats east of Canal, Pacific entrance.....	95,000
Dumped at sea, Pacific entrance.....	36,600
Total.....	253,400

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form:

	April, 1922.	March, 1922.	April, 1921.
	Gallons.	Gallons.	Gallons.
Pumping stations.....	658,810,000	686,383,250	783,872,250
Filtration plants.....	380,175,000	402,585,000	479,176,000
Water consumed by Panama City.....	78,703,000	82,952,000	97,213,000
Water consumed by Colon.....	58,159,750	58,020,500	60,558,750
Sales of water to vessels.....	10,616,628	9,470,092	10,983,210

Construction work, as itemized below, was under progress during the month, with completion on March 31 and April 30, as shown:

	Per cent completed.	
	March 31.	April 30.
Fill, France Field.....	99.5	99.5
Sea wall and dry fill, Coco Solo.....	90	100
Extension of roads, new Santo Tomas Hospital.....	61	61
Foundation of statue of Balboa.....	79	79
Extension of sea wall, new Santo Tomas Hospital.....	99	99
Installation of electric duct line, new Santo Tomas Hospital.....	65	65
Construction of 20-inch concrete drain pipe line, Colon.....		50
Construction of shed for housing division equipment.....		25
Construction of sea wall along south side of Strangers' Club.....		75
Installation of 10-inch high pressure water line to Tivoli.....		30

* Work discontinued at the request of the Panama Government.

OCCUPANTS OF QUARTERS.

Occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	As of April 30, 1922.			Total occupants.		
	Men.	Women.	Children.	April, 1922.	March, 1922.	April, 1921.
Americans.....	2,347	1,011	2,089	6,347	6,527	8,033
Europeans.....	102	41	91	234	236	260
West Indians.....	4,100	2,550	5,661	12,311	12,120	11,814
Totals, April, 1922.....	6,549	4,502	7,841	18,892		
Totals, March, 1922.....	6,510	4,487	7,886		18,883	
Totals, April, 1921.....	8,148	4,561	7,398			20,107

WORKING FORCE.

The following tabulation shows the number of gold and silver employees as of April 19, 1922, by departments, together with a comparison of the working force for the preceding month and that of April, 1921:

	Employees as of April 19, 1922.			Total employees.	
	Gold.	Silver.	Total.	March, 1922.	April, 1921.
Operation and Maintenance:					
Office.....	29	54	83	84	80
Electrical.....	147	163	310	311	417
Municipal Engineering.....	71	500	571	600	885
Lock Operation.....	169	590	759	849	911
Dredging.....	134	594	728	757	938
Mechanical.....	331	564	895	838	1,968
Marine.....	153	391	544	511	684
Fortifications.....	44	215	259	341	326
Totals.....	1,078	3,071	4,149	4,291	6,209
Supply Department:					
Transportation.....	30	143	173	173	
Quartermaster.....	134	791	925	929	2,095
Subsistence.....	15	195	210	226	413
Commissary.....	173	760	933	950	1,655
Cattle Industry—Plantations.....	9	395	404	356	297
Hotel Washington.....	8	83	91	94	105
Totals.....	369	2,367	2,736	2,728	4,565
Accounting Department.....	177	7	184	181	240
Health Department.....	214	731	945	961	1,105
Executive Department.....	497	239	736	739	826
Totals.....	888	977	1,865	1,881	2,171
Panama Railroad:					
Superintendent.....	47	219	266	297	499
Transportation.....	67	97	164	175	250
Receiving and Forwarding Agency.....	63	678	741	611	971
Coaling stations.....	86	531	617	585	1,405
Totals.....	263	1,525	1,788	1,668	3,125
Grand totals, April, 1922.....	2,598	7,940	10,538		
Grand totals, March, 1922.....	2,628	7,940		10,568	
Grand totals, April, 1921.....	3,731	12,339			16,070

¹ Includes 422 employees of the former Building Division.

SCHOOLS.

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone, for the month of April, 1922:

	White.	Colored.	Total.
Gross enrollment.....	2,052	1,835	3,887
Net enrollment.....	1,882	1,787	3,669
Average daily attendance.....	1,514.1	1,326.9	2,841
Pupils neither absent nor tardy.....	1,011	703	1,714
Number of cases of tardiness.....	179	48	227
Number of teachers.....	77	32	109

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of the material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, and cash sales from stock, are shown below in comparative form.

	April, 1922.	March, 1922.	April, 1921.
Material received on United States requisitions, chargeable as follows:			
Operation and Maintenance.....	\$97,145.92	\$92,935.36	\$317,038.37
Construction and equipment.....			6,877.01
Miscellaneous.....	1,611.94	1,702.52	22,809.78
Totals.....	98,757.86	94,637.88	346,725.16

	April, 1922.	March, 1922.	April, 1921.
Cash sales on the Isthmus:			
Stock	31,646.39	30,056.34	35,081.05
Fuel oil (including sales to ships)	25.40	67.62	840.40
Scrap	521.37	902.88	368.66
Obsolete and second-hand material	2,391.96	4,156.89	3,045.37
Totals	34,585.12	35,183.73	39,335.48
Sales to steamships from storehouses:			
Miscellaneous stock items	14,564.20	9,240.67	12,893.04
Fuel oil		67.62	840.40
Totals	14,564.20	9,308.29	13,733.44

Respectfully,

JAY J. MORROW,

Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 18, 1922.

The U. S. S. *Nevada* reports: "White deck house awash, 2 ventilators, at latitude 15° 28' N., Longitude 98° 9' W., noon, May 14, 7th meridian civil time."

JAY J. MORROW,

Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended May 17:

Steamships *Oanfa*, repair 1 piece of auxiliary steam line; *West Cherow*, furnish services of diver to pack around tail shaft to make necessary repairs to stern gland; launch *Petrolia*, examine engine; manufacture 4 valve stems; ream guide holes; tighten shaft on magneto.

PREVIOUSLY REPORTED.

Dredge No. 86, renew main deck house sills and deck; renew upper fender plank shear; renew 70 feet of upper deck sills and deck; renew ice box; build new gantry frames; change round spud wells to square; remove and replace deck machinery in wake of repairs; install new ladder brake wheel; redeck and calk galley floor; scale deck plates in way of replacement of wood decks; tug *Favorite*, convert from coal burner to oil burner.

The following vessels were at the Cristobal shops for repairs during the week ended May 22:

Motor schooner *Alsace*, repair gasoline engines and weld new end on davit; steamship *Advance*, remetal and bore blower engine crank-pin brasses; repair casting for lead to winch; repair after dynamo, fresh water pump and chest cover for sanitary pump; overhaul ammonia compressor suction valve, etc.; tug *Porto Bello*, repair steering engine; remove H. P. piston rod and renew springs to packing; regrind piston rod and line up H. P. slide; make 1 new set of metallic packing; repair valve cages and install new H. P. valve, etc.; steamship *Manavi*, make 3 canvas slings as directed; tug *Engineer*, remove old tank from bilges in after hold; overhaul boilers; renew floor angles, floor plates, and ash guards in fireroom; remove old water tanks in fore hold and install new tank; clean, test, and repair main condenser; overhaul and install air pump; overhaul anchor windlass; repair discharge line from ejector; repair rudder chain; repair main thrust, fresh water pump and make general repairs to main engines, etc.; steamship *Cristobal*, manufacture crank-pin wrench; repair chain falls, repair galley stove, etc., *Conde de Churruarín*, *Ceres*, *Orita*, *Solana*, U. S. M. P. *Graham*, schooner *Arabia*, and tug *Coco Solo*, minor repairs.

Distribution of Cargo Passing Through the Panama Canal from the Pacific to the Atlantic, April, 1922.

From—	NORTH AMERICA.										EUROPE.										Grand totals.	Percent of total cargo.		
	UNITED STATES.																							
	UNITED STATES.				Canada.	East coast of Mexico.	West Indies.	Cristobal, C. Z. ²	Total, North America.	British Isles.	Belgium.	Denmark.	France.	Germany.	Holland.	Norway.	Sweden.	Europe. ³	Total, Europe.	East coast of South America.			South Africa.	
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.																				
SOUTH AMERICA:																								
Chile.....	26,927	53,500	2,675	83,102			181	55	83,338	19,754	4,005		1,028	5,098	4,500			8,131	42,516			125,854	95.02	
Peru.....	323			323				4,360	4,683	8,705	1,629			3				1,249	11,586			16,269	3.36	
Colombia.....	699			699				817	1,516												7	1,323	0.32	
Ecuador.....	3,336			3,336				2,785	6,121				5	40				345	390			6,511	1.35	
West coast of South America ¹								17	17									1,587	1,587			1,604	0.33	
Total, South America.....	31,285	53,500	2,675	87,460			181	8,034	95,675	28,459	5,634		1,033	5,141	4,500			11,312	56,079	7		151,761	31.38	
NORTH AMERICA:																								
West coast of United States.....	107,720	3,230	2,237	113,187			1,639	4,751	416	119,993	55,487	1,180	1,250	531	4,778	3		784	20,790	84,803	2,286	4,581	211,663	43.76
West coast of Canada.....	4,717			4,717						4,717	270			341	215			811	6,410			11,127	2.30	
West coast of Central America.....	19			19			98	9,885	10,002					345				930	2,205			12,207	2.52	
Total, North America.....	112,456	3,230	2,237	117,923			1,639	4,849	10,301	134,712	60,260	1,450	1,250	1,217	4,993	3		930	33,418	2,286	4,581	234,997	48.58	
ASIA:																								
China.....	4,665			4,665					4,665														4,665	0.96
Japan.....	1,441			1,441				64	1,505														1,505	0.31
Philippines.....	22,927			22,927					22,927														22,927	4.74
Indo-China.....	1,035			1,035					1,035														1,035	0.21
Far East ²	3,742			3,742					3,742														3,742	0.78
Total, Asia.....	33,810			33,810				64	33,874														33,874	7.00
AUSTRALASIA:																								
Australia.....	11,647			11,647					11,763	13,996									13,996				25,759	5.33
New Zealand.....	2,491			2,491					2,491	28,281				1,500					29,781				32,272	6.67
Australasia ²									4,723										4,723				4,723	0.98
Total, Australasia.....	14,138			14,138					14,254	47,000				1,500					48,500				62,754	12.98
Hawaii.....	53			53					53					175					175				228	0.05
Grand totals.....	191,742	56,730	4,912	253,384	116	1,639	5,030	18,399	278,568	135,719	7,084	1,250	2,425	11,634	4,503	930	1,714	32,913	198,172	2,293	4,581	483,614	100.0	
Per cent of total cargo:																								
April, 1922.....	39.65	11.73	1.02	52.40	0.02	0.34	1.04	3.80	57.60	28.06	1.46	0.26	0.51	2.41	0.93	0.19	0.35	6.81	40.98	0.47	0.95	100.0	.....
March, 1922.....	47.29	0.58	3.55	51.42	0.15		0.26	3.11	54.94	29.81	1.01	0.35	3.58	5.50	0.02			4.63	41.90	0.16		.....	
April, 1921.....	30.60	12.10	0.40	43.10		0.20		2.20	45.50	31.30	0.20	0.60	6.70	3.00	4.50			5.10	54.50			.....	

¹Figures represent tons of 2,240 pounds.²Includes both local and transfer cargo.³General cargo not routed so as to allow a more definite segregation.

(Continued on page 534.)

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, May 20, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.		Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.			Beam.	Water draft.				Nature.	Tons.	Gross.	Net.
Calabria	13	12 53	14	6 15	14	11 09	14	15 14	British	C. T. Bowring & Co.	420 0	54 0	28 8	New Orleans	Shanghai.	Kerosene	8,490	6,837	5,043
W. L. Connolly	13	7 05	14	7 20	14	11 46	14	16 16	American	Standard Navigation Co.	304 0	44 2	24 8	Tampico	Corinto	Crude oil	(+)	3,214	2,326
Wagon	14	11 12	14	11 45	14	18 46	15	12 45	German	Roland Line.	393 0	51 0	19 6	Hamburg	Corral	General	2,540	6,573	4,629
Pisa Triangle	14	11 50	14	12 23	14	19 28	14	26 45	American	N. Atl. and West. S. S. Co. (S. B.)	390 0	54 2	20 6	Boston	Seattle	General	2,229	6,209	4,317
Cayenne 2209	9	14	14	9	14	9	14	9	Panamanian	J. Jimenez	457 0	58 0	24 6	Cristobal	Gatun Lake.	Unknown	3,890	9,159	6,883
Panama	14	16 07	15	6 25	15	13 06	16	12 30	British	New Zealand Shipping Co.	395 5	55 0	27 10	London.	Wellington.	General	8,762	6,841	4,758
Wye	14	13 33	15	7 12	15	15 07	15	16 15	American	Barber Line (S. B.)	410 0	54 0	24 8	New York	Yokohama.	General, cotton	7,554	6,304	4,752
Rosset case	14	15 30	15	8 10	15	16 10	16	2 40	Norwegian.	Olaf Orvig.	378 0	44 0	23 1	Norfolk	Kobe.	General, steel	239	4,552	3,182
Pyrrhus	13	14 18	15	8 42	15	15 57	15	23 15	Chilean	South American Steamship Line.	454 0	56 2	31 0	Cristobal	Valparaiso.	General	5,507	7,981	5,518
Hansa	15	6 18	15	9 15	15	16 58	15	18 20	British	New Zealand Shipping Co.	454 0	56 2	31 0	St. John.	Auckland.	General	9,550	9,183	6,954
City of Cambridge	15	4 36	15	11 00	15	17 50	15	18 57	British	Ellerman Lines	454 0	58 3	28 2	New York	Shanghai.	Machinery, etc.	8,644	7,744	4,804
San Jose	15	9 25	15	12 59	15	19 50	15	21 25	American	Grace Line	404 6	53 0	29 2	Baltimore.	San Francisco.	Tin plates, etc.	7,523	6,250	4,700
Vesta Maru.	15	19 20	16	6 12	16	14 30	16	15 45	Japanese	Kabushiki Kisen Kaisha	385 0	51 0	28 0	New York	Kobe.	General	6,850	8,199	6,250
Livestock	15	6 04	16	7 05	16	13 45	16	17 10	American	Atl. Gulf and Pacific Co. (S. B.)	410 0	56 0	24 0	Jacksonville.	Los Angeles.	General	10,475	9,033	5,938
K. R. Kings	16	1 40	16	11 30	16	19 14	16	20 45	American	Standard Oil Co.	440 0	58 0	29 7	Amsterdam	Los Angeles.	Creosote	6,116	7,047	5,430
A. L. Kent	16	18 07	17	6 10	17	14 04	17	20 47	American	Crowell & Thurlow.	394 1	55 1	24 0	Boston	Los Angeles.	General	1,311	5,864	4,266
Ansaldo San	17	3 41	17	8 00	17	14 51	18	19 20	Italian.	Italian Line	378 0	51 6	46 6	Genoa.	Valparaiso	General	458	4,838	2,459
Giorgio I.	13	16 20	17	11 00	17	17 28	17	19 57	Peruvian.	Peruvian Line.	267 3	46 0	18 6	Cristobal	Ilo	General	1,439	2,379	1,593
Maclure	13	15 45	17	13 00	17	19 04	17	21 52	American	Pacific Mail Steamship Co.	283 0	37 0	17 2	Cristobal	San Francisco	General	6,450	7,217	5,295
San Juan	13	15 45	17	13 00	17	19 04	17	21 52	Panamanian.	Andres Flores.	30 0	4 6	3 0	Cristobal	Gatun Lake.	Unknown	1,218	2,844	1,758
Lena Luckenbach	18	1 00	18	8 45	18	15 42	18	17 00	American	Luckenbach Line	425 0	53 8	21 5	New York	Los Angeles.	General	2,000	5,776	4,081
Alvarado	18	11 58	19	6 12	19	13 58	19	15 08	British	McAndrews & Co.	303 0	43 0	15 6	New York	Guayaquil	General	3,670	9,165	6,911
Santa Ana	18	7 49	19	8 00	19	15 30	21	1 35	American	Holland Mail Steamship Co.	360 2	51 6	24 2	New York	Seattle	General	8,584	7,611	5,450
Moerdijk	18	15 06	19	10 25	19	16 43	19	18 05	Dutch	Pacific Mail Steamship Line.	472 8	61 0	20 6	Rotterdam.	Seattle.	General	7,944	7,893	5,647
Montgomery	15	4 29	19	12 50	19	20 47	19	22 12	American	United States Steel Products Co.	424 2	56 2	26 8	Boston	Seattle.	Steel, general	3,117	3,228	2,010
Deerfield	19	13 52	20	6 20	20	13 51	20	14 55	American	Eller Steel Steamship Co.	434 3	57 7	28 6	New York	Seattle	General	256	2,064	1,479
Garfield	19	14 06	20	7 25	20	14 42	20	17 08	American	Grace Line	239 0	45 0	21 3	New York	Salaverry	General	4,859	7,067	5,288
Sarrafes	19	9 48	20	7 31	20	14 44	20	16 09	Norwegian.	Thor Thorsen	254 8	39 0	13 7	New York	Guayaquil	General	2,851	5,707	3,646
Annan	19	14 20	20	8 15	20	15 19	20	16 25	Danish	East Asiatic Steamship Co.	398 2	53 6	22 0	Antwerp.	San Francisco	General, coke	2,985	9,099	6,117
Nebrahen	19	20 42	20	8 45	20	18 50	20	17 08	American	American-Hawaiian Line	368 6	55 2	21 0	New York	Seattle	General	9,000	7,405	5,166
Essequibo.	19	19 26	20	12 40	20	18 50	20	20 35	British	Pacific Steam Navigation Co.	450 0	57 0	25 6	New York	Valparaiso.	General			
Anne	20	12 48	20	12 55	20	20 15	20	21 30	American	Standard Transportation Co.	435 0	56 0	28 0	Sabine	Shanghai	Oil			

* 30,000 barrels.

* Motor ship.

* Pipe, structural steel, cement, and general.

15	12	15	15	8	06	15	15	30	16	12	04	Danish	Dampselak Aktries Orient	385	0	53	3	27	0	Portland	London	General	8,073	6,080	4,670
44	20	00	16	6	33	16	14	30	16	20	40	American	Grace Line	298	6	40	15	6	0	Chimbote	New York	General	691	2,832	1,803
15	16	30	16	6	57	16	11	45				American	United States Navy	219	3	20	4	17	0	San Pedro	New London				
15	16	30	16	6	58	16	14	49				American	United States Navy	219	3	20	4	17	0	San Pedro	New London				
8	3	30	16	7	22	16	15	26	16	18	05	British	Imperial Oil Co.	403	2	60	2	26	0	Talara	Hamburg	Crude naphtha	10,374	8,491	6,095
15	17	20	16	12	23	16	15	27	16	19	25	British	New Zealand Steamship Co.	485	0	51	3	26	0	Wellington	Hamburg	Crude storage, gen	5,804	11,600	8,085
17	4	40	17	8	01	17	18	50	17	16	00	Japanese	Kokusan Kisen Kabushiki Kaisha	385	0	62	0	25	6	Tacoma	Norfolk	Cold storage, gen	7,401	5,919	4,425
15	16	30	17	7	27	18	14	09	20	22	45	Panaman	Santiago Sagel	34	9	12	2	4	6	Panama	Colon	Ballast	17		14
17	7	50	17	8	31	17	16	30	17	16	30	American	Luckenbach Line	446	0	56	0	19	6	San Francisco	Boston	General	4,304	8,552	6,235
17	7	00	17	9	50	17	17	50	18	11	19	British	Pacific Steam Navigation Co.	303	4	43	0	14	6	Guayaquil	New York	General	112	2,878	1,714
13	15	53	18	6	38	18	13	45	18	15	47	British	United States Navy	454	8	61	4	23	6	Honolulu	Naval R'ds	General	1,006	8,426	5,270
16	20	00	18	7	43	18	17	24				British	Scotts Mauden Co.	229	0	33	1	16	6	Papeete	Marseilles	Navy stores	400	533	422
18	8	00	18	9	12	18	15	55	19	12	23	British	Pacific Steam Navigation Co.	485	4	58	0	28	0	Valparaiso	Liverpool	Coconut oil	5,591	9,935	6,551
18	11	25	18	12	58	18	20	30	18	21	50	British	Canadian Government	308	2	52	4	17	0	Melbourne	Montreal	General	1,600	5,956	4,150
18	13	30	18	14	14	18	21	54	19	31	70	British	East Asiatic Steamship Co.	400	0	53	6	28	3	Tacoma	Copenhagen	General	8,600	7,068	5,303
18	16	30	19	7	30	19	13	32	19	13	52	American	Peoples Steamship Co.	400	3	45	26	6	0	Antofagasta	Baltimore	Copper, nitrate	6,274	5,037	3,492
18	19	30	19	8	41	19	14	35	19	16	25	British	Peoples Steam Navigation Co.	393	0	50	0	25	6	Valparaiso	London	General	5,758	6,013	4,494
19	1	30	19	8	41	19	14	35	19	16	25	British	Andrew Weir & Co.	399	0	52	0	14	0	Callao	New York	Ballast	5,721	2,721	4,096
19	3	00	19	9	15	19	17	24	21	51	59	British	Royal Navigation W. I. Mail	348	0	48	0	17	5	Bahia	Hamburg	General	2,856	3,423	3,123
19	3	00	19	9	15	19	17	24	21	51	59	British	French Line	329	2	47	0	18	2	Tampico	Hamburg	Ballast	3,141	2,009	6
19	10	30	19	11	14	19	17	52	19	23	15	French	N. and Atl. Western S. S. Co.	350	0	54	2	23	0	Portland	New York	Lumber, wool	5,779	6,440	3,332
19	14	53	19	13	19	23	25	20	18	55	American	United States Shipping Board</													

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	To—
May 14.	Abangarez	United Fruit Co.	New Orleans via Habana.	May 14.	John Worthington.	Standard Oil Co.	Texas City.
May 14.	Venezuela	Royal Netherlands W. I. Mail	Port Limon	May 14.	Venezuela	Royal Netherlands W. I. Mail	Puerto Colombia.
May 15.	Parinama	United Fruit Co.	New Orleans.	May 15.	Abangarez	United Fruit Co.	Bocas del Toro.
May 15.	Conde de Churruena	Eastern Com. de Oriental	Tampico.	May 16.	Plarica ⁶	Max. Freundlich	Colon.
May 16.	Ulua	United Fruit Co.	New York via Habana.	May 17.	Siacha	Eastern Com. de Oriental	Tampico.
May 16.	Plarica ⁶	Max. Freundlich	Colon.	May 17.	Ulua	United Fruit Co.	New York via Kingston
May 16.	Cristobal	Panama Railroad Steamship Line.	Norfolk.	May 18.	Parinama	United Fruit Co.	New Orleans via wayports. ⁴
May 17.	Advance	Panama Railroad Steamship Line.	Puerto Colombia.	May 18.	Carrillo	United Fruit Co.	New Orleans via wayports.
May 17.	Siacha	Pan-American Petroleum Co.	Columbian ports.	May 18.	Abangarez	United Fruit Co.	New Orleans.
May 17.	Norman Bridge.	United Fruit Co.	New York via Kingston.	May 18.	Norman Bridge.	Pan-American Petroleum Co.	Tampico.
May 18.	Carrillo	United Fruit Co.	Bocas del Toro.	May 19.	Colon	Panama Railroad Steamship Line.	New York via Haiti.
May 18.	Abangarez	United Fruit Co.	Tampico.	May 19.	San Bruno	United Fruit Co.	Boston.
May 19.	Solana	Pacific Mail Steamship Co.	Boston via wayports.	May 20.	Solana	Pacific Mail Steamship Co.	Puerto Lobos.
May 20.	San Bruno	United Fruit Co.		May 20.			
PORT OF BALBOA.							
April 24.	Rosana ⁴	Alberto Falt.	Punta Arenas	May 15.	Rosana ⁴	Alberto Falt.	Punta Arenas.
May 16.	Desce	United States Shipping Board	United States	May 17.	Desce	United States Shipping Board	Valparaiso.

*Other than ships passing through the Canal.

Comm. launch. United States Navy supply boat. Launch.

Distribution of Cargo Passing Through the Panama Canal from the Atlantic to the Pacific, April, 1922. — Continued from page 531.

From—	SOUTH AMERICA.					NORTH AMERICA.					ASIA.					AUSTRALASIA.					Grand totals.	Per cent of total cargo.
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. 2	Total South America.	West coast of United States.	West coast of Canada.	West coast of Central America.	Bahoa, C. Z.	Total, North America.	Japan.	China.	Far East. 2	Total, Asia.	New Zealand.	Australia.	Australasia. 2	Total, Australasia.	Hawaii.		
UNITED STATES:																						
North Atlantic ports	11,931	1,370	84	5,986	6,127	25,498	127,527	1,567		1,000	130,094	46,107	24,900	23,737	94,746		2,415	11,092	13,507	7,359	271,204	48.2
South Atlantic ports	19,527				19,527	4,530	4,530			4,530	3,220	558	514	4,292	4,292						28,349	5.0
Gulf ports					1,130	1,130	14,901				14,901	22,120	24,404	7,580	54,113	8,304	1,311		9,615	21	79,780	14.2
Total United States.	31,458	1,370	84	5,986	7,257	46,155	146,958	1,567		1,000	149,525	71,456	49,862	31,833	153,151	8,304	3,726	11,092	23,122	7,380	379,333	67.4
East coast of Mexico	19,600				19,600				2,504	9,500	9,500										29,100	5.2
Cristobal		688	240		2,563	3,491	439		16		2,943				29,869						6,434	1.2
West Indies								6,254			6,270	19,619	10,250					2,463	2,463		36,130	6.4
East coast of Canada																					2,463	0.4
Total North America	51,058	2,058	324	5,986	9,820	69,246	147,397	7,821	2,520	10,500	168,238	91,075	60,112	31,833	183,020	8,304	3,726	13,555	25,585	7,380	453,469	80.6
EUROPE:																						
Belgium	163		172	1,745	2,489	4,569	10,685				10,685					500			500		15,754	2.8
British Isles	4,040		23	2,258	2,793	9,114	12,844	2,070			14,914					17,521			32,315	7,167	63,510	11.3
Germany				181	2,629	2,810	1,387			10	1,397										4,207	0.7
Holland					1,185	1,185	1,107				1,107										2,292	0.4
Denmark					763	763															763	0.1
Europe	1,007	93	184	602	8,535	10,421	4,471			25	4,496										14,917	2.7
Total Europe	5,210	93	379	4,786	18,394	28,862	30,494	2,070		35	32,599					18,021			32,815	7,167	101,443	18.0
East coast of South America.		352	36			388	6,928	153			7,081	52				52					7,521	1.4
Grand totals	56,268	2,503	739	10,772	28,214	98,496	184,819	10,044	2,520	10,535	207,918	127,601	112,318	31,833	183,072	26,325	3,726	28,349	58,400	14,547	562,433	
Per cent of total cargo:																						
April, 1922	10.0	0.5	0.1	1.9	5.0	17.5	32.9	1.8	0.4	1.9	37.0	16.2	10.7	5.6	32.5	4.7	0.7	5.0	10.4	2.6		100.0
March, 1922	8.4	0.1	0.9	1.5	0.3	11.2	30.3	5.9	0.5	1.4	38.9	28.0	8.8	0.6	37.6	7.9	3.3		11.2	1.0		
April, 1921	15.6	0.3	0.2	3.6	4.7	24.4	26.0	1.4	0.4	2.0	31.0	7.9	2.3	12.0	22.2	8.9	6.2	7.3	22.4			

* Figures represent tons of 2,240 pounds.

† General cargo not routed so as to allow a more definite segregation.

‡ Represents both local and transfer cargo.

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JUN 20 1922

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Volume XV.

Balboa Heights, C. Z., May 31, 1922.

No. 42.

Visit of the Secretary of the Navy.

The U. S. Navy transport *Henderson*, carrying the Hon. Edwin Denby, Secretary of the Navy, and members of the Class of 1881, U. S. Naval Academy, with their families, arrived at Cristobal and made the transit of the Canal on May 27, on the way to Japan. The transport tied up at Balboa until the afternoon of May 29. Secretary Denby inspected the Canal and was the guest of honor at various receptions and dinners.

Increase in Lumber Shipments Through the Canal.

Shipments of lumber through the Panama Canal during the month of April were greater than for any month since December, 1920, and amounted to 102,194 tons. Of the total, 4,641 tons came from the west coast of Canada and 97,553 tons from the west coast of the United States. The destination of the lumber was 87,943 tons to the east coast of the United States, 3,860 tons to Great Britain, 2,573 tons to other European ports; 4,581 tons to South Africa, 1,708 tons to the east coast of South America, and 1,529 tons to Mexico.

Total shipments during the preceding 6 months, from Pacific to Atlantic, were October, 56,606 tons; November, 50,564; December, 42,610; January, 57,347; February, 64,002; and March, 74,432 tons.

Nitrate Shipments Show Increase.

Shipments of nitrate from Chile through the Canal showed a sudden rise in April, and exceeded shipments during any month since April, 1921. From an average of approximately 40,000 tons a month for the period since April of last year (in which the largest quantity for a month was 59,957 tons, in December and the lowest 22,231 tons, in March, 1922), shipments rose to 79,325 tons in April, 1922.

Nitrate shipments during the fiscal year ending June 30, 1921, aggregated 1,530,592 tons and made up the principal cargo passing through the Canal. During the first 10 months of the current fiscal year the nitrates have aggregated 417,188 tons.

Predictions of Increased Barley Traffic.

Increased shipments of barley from the west coast of the United States to Great Britain and the continent of Europe during the coming 12 months are predicted by some of the grain dealers and shipping men of the west coast.

During the 10 months of the current fiscal year ending April 30, the shipments of barley from the west coast of the United States passing through the Panama Canal aggregated 340,513 tons, an average of 34,051 tons a month. The month in which the greatest quantity passed through the Canal from the west coast of the United States was August, with 99,129 tons.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, May 27, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Astral	20	14	00	21	6	13	21	13	48	21	15	10	58.0	28.6	New York	Petroleum.	10,000	8,913	6,233
Bohema	19	13	00	21	6	35	21	13	58	21	15	33	384.0	46.0	Genoa	General	504	5,531	3,773
Santa Verónica	20	14	38	21	8	15	21	18	33	21	19	55	251.0	43.5	Baltimore	General	3,340	2,823	1,740
Eldorado	20	17	00	21	8	15	21	18	38	21	19	55	245.6	42.0	New Orleans	General	2,803	2,439	1,662
Moerish Prince	20	21	18	21	8	35	21	18	38	21	17	38	425.5	56.4	New York	General	7,962	7,629	5,707
Havel Branch	20	21	18	21	10	00	21	17	15	21	18	08	400.4	52.0	Liverpool	General	3,500	5,208	3,578
Maimoa	21	16	01	22	6	35	22	14	38	22	15	30	477.9	63.0	Glasgow	General	4,391	11,053	7,895
Lobos	21	12	35	22	7	03	22	13	20	22	22	10	405.6	54.2	Hull	General	7,158	7,151	4,756
Egmont	22	6	04	22	10	00	22	17	36	22	18	55	410.0	52.0	New York	General	7,494	6,049	4,422
Castle	22	18	21	23	6	15	23	14	43	23	16	05	380.0	52.0	New York	General	7,313	5,517	3,937
Hufaro	23	11	35	23	11	35	23	17	57	23	19	29	400.0	52.3	Havre	General	2,500	5,672	4,042
Kalomo	22	15	20	24	6	16	24	15	28	24	16	20	412.5	53.3	Bordeaux	General	5,181	6,928	4,776
Michigan	23	17	36	24	7	10	24	15	32	24	16	55	414.5	57.7	Mobile	General	8,300	7,779	5,732
Jacob	24	2	14	24	9	05	24	16	28	24	17	35	395.0	55.1	New York	General	6,865	6,532	4,528
William A.	24	12	32	24	13	00	24	20	48	25	0	20	523.5	65.7	New York	General	10,677	11,811	8,326
McKenney	24	17	36	24	7	10	24	15	32	24	16	55	414.5	57.7	Mobile	General	8,300	7,779	5,732
Robert Dollar	24	2	14	24	9	05	24	16	28	24	17	35	395.0	55.1	New York	General	6,865	6,532	4,528
Edward	24	17	36	24	7	10	24	15	32	24	16	55	414.5	57.7	Mobile	General	8,300	7,779	5,732
Luckenbach	24	17	36	24	7	10	24	15	32	24	16	55	414.5	57.7	Mobile	General	8,300	7,779	5,732
Luckenbach	25	14	48	26	6	27	26	13	30	27	14	00	375.0	55.1	New York	General	6,865	6,532	4,528
Mundelta	25	7	15	26	7	23	26	14	52	26	16	05	370.0	53.2	Sabine	General	6,205	8,543	6,427
Chabok	24	16	56	27	6	03	27	13	05	27	14	00	150.0	27.6	Key West	Sulphur, crude	6,600	5,608	4,217
Vaughn	24	16	56	27	6	03	27	13	05	27	14	00	110.8	14.8	Key West	General	6,205	8,543	6,427
Cygan	24	16	56	27	6	03	27	13	05	27	14	00	110.8	14.8	Key West	General	6,205	8,543	6,427
Smith	24	16	56	27	6	03	27	13	05	27	14	00	110.8	14.8	Key West	General	6,205	8,543	6,427
Manavi	23	22	00	27	6	08	27	13	28	27	17	50	216.0	35.0	Cristobal	General	570	1,357	884
San Francisco	26	1	25	27	7	18	27	14	10	27	23	10	375.0	55.1	Philadelphia	General	796	5,298	4,019
Ucayali	27	18	37	27	10	52	27	17	12	27	23	10	375.0	55.1	Philadelphia	General	796	5,298	4,019
Henderson	27	10	32	27	11	00	27	18	37	27	20	51	374.0	46.0	Gothenburg	General	269	4,466	2,405
Levant Arrow	27	12	07	27	12	25	27	19	32	27	20	51	480.0	61.0	Cristobal	General	350	5,298	4,019
Heider	26	17	50	27	12	40	27	19	32	27	20	51	468.3	62.7	Norfolk	Naval stores	10,900	9,744	7,039
Barge S.	26	17	50	27	12	40	27	19	32	27	20	51	372.1	50.0	Hamburg	Kerosene	3,218	5,117	3,807
															Cristobal	General			

* Transport.

* Subbasher.

* Tug.

* Motor ship.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Ship	Date	Vessel	From—	Line	Date	Vessel	Line	For—
Steel Ranger	20 19 00	21 14 40	21 17 55	American	United States Steel Products Co.	Seattle	New York	C. S. and general
North American	21 13 00	21 13 45	21 23 55	British	North American Steamship Co.	Guayaquil	New York	General
Santa Elisa	22 5 30	22 8 40	22 15 22	20 06	Grace Line	Talcahuano	New York	General
Utsumi	22 6 00	22 8 55	22 17 27	18 50	Barber Line	Shanghai	Philadelpia	General
Yokohama	22 9 00	22 11 39	22 18 39	20 52	Peruvian Line	Mollendo	Cristobal	(6)
Colombia	22 21 58	23 6 46	23 14 05	6 15	Pacific Mail Steamship Co.	New York	New York	(7)
Thomas F. Beal	22 21 30	23 7 36	23 14 37	23 14 47	Crowell & Thurlow	Everett	New York	General
Jamaica	23 5 15	23 8 17	23 15 25	11 06	Pacific Steam Navigation Co.	Tunao	Pro. Colombia	(8)
Minnesota	23 6 10	23 8 54	23 17 00	24 6 35	American-Hawaiian Line	Tacoma	Liverpool	General
W. L. Connelly	23 11 25	23 11 36	23 18 39	23 20 30	Sinclair Navigation Co.	Corinto	Liverpool	Ballast
Laura C. Hall	23 1 00	23 12 08	23 19 24	16 38	United States Shipping Board	Buenaventura	Cristobal	Coffee
Nevada	19 15 15	24 7 00	24 16 38	24 16 38	United States Shipping Board	San Pedro	Norfolk	(9)
West Isleta	22 22 31	24 7 54	24 16 47	24 20 55	Oriental Navigation Co.	Seattle	Philadelpia	(10)
Ormoso	24 9 35	24 14 14	24 18 00	24 20 55	United States Shipping Board	San Francisco	New York	General
Endicott	24 16 45	25 6 48	25 14 26	25 14 26	United States Shipping Board	Shanghai	New York	General
Ohioan	25 2 05	25 8 51	25 15 45	25 15 50	American-Hawaiian Line	San Francisco	New York	General
Oak Branch	25 8 15	25 9 47	25 17 30	25 19 20	F. & W. Ritson	Corral	Liverpool	General
George Washington	25 9 15	25 10 46	25 18 22	25 18 22	Peter Olsen	Portland	Norway	General
Cauca	25 10 30	25 14 12	25 21 05	25 21 05	Pacific Steam Navigation Co.	Champerico	Cristobal	(11)
Osage	26 1 00	26 7 50	26 15 30	26 18 30	United States Shipping Board	Seattle	New York	Lumber, general
Aysen	25 22 00	27 6 41	27 16 07	27 16 07	Chilean Line	Talcahuano	Cristobal	General
Roland	26 23 15	27 7 44	27 16 27	27 17 16	Roland Line	Corral	Hamburg	General

* Battleship.

* Copper, cocoa, cotton, and general.

* Coffee, sugar, flour, dried fruit, etc.

* Hides, coffee, and general.

* 28,400 tons displacement.

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PORT OF CRISTOBAL.

Ship	Date	Vessel	From—	Line	Date	Vessel	Line	For—
May 21	Turialba	United Fruit Co.	New Orleans via Habana.	Panama Railroad Steamship Line.	May 21	Advance	Panama Railroad Steamship Line.	Puerto Colombia.
May 22	La Navarre	French Line	Havre via wayports.	Panama Railroad Steamship Line.	May 22	Cristobal	Panama Railroad Steamship Line.	Norfolk.
May 23	Albaro	Italian Line	Genoa via wayports.	United Fruit Co.	May 23	Turialba	United Fruit Co.	Bocas del Toro.
May 24	Tolosa	United Fruit Co.	New York via Habana.	Royal Netherlands W. I. Mail.	May 24	Stuyvesant	Royal Netherlands W. I. Mail.	Port Limon.
May 25	Stuyvesant	Royal Netherlands W. I. Mail.	Hamburg via wayports.	Italian Line	May 25	Albaro	Italian Line	Port Limon.
May 26	San Gil	United Fruit Co.	Boston via Habana.	Tolosa	May 26	Tolosa	United Fruit Co.	New Orleans via wayports.
May 27	Gen. G. W. Goethals	United Fruit Co.	New Orleans.	May 27	Cartago	United Fruit Co.	United Fruit Co.	New Orleans via wayports.
May 28	Oranian	Panama Railroad Steamship Line.	New York via Haiti.	May 28	Turialba	United Fruit Co.	United Fruit Co.	New Orleans via wayports.
May 29	Turialba	Leiyland Line	Liverpool	May 29	San Gil	United Fruit Co.	United Fruit Co.	Boston via wayports.
May 30	Oranian	United Fruit Co.	Bocas del Toro.	May 30	La Navarre	French Line	French Line	Havre via wayports.
May 31	Antiochia	Hamburg-American Line	Hamburg via wayports.	May 31	Coronado	Elders & Fyffes, Ltd.	Elders & Fyffes, Ltd.	Bristol via wayports.
May 32	Stuyvesant	Royal Netherlands W. I. Mail.	Port Limon.	May 32	Oranian	Hamburg-American Line	Hamburg-American Line	Puerto Barrios.
May 33	Albaro	Italian Line	Port Limon.	May 33	Stuyvesant	Leiyland Line	Leiyland Line	Kingston.
May 34	Coronado	Elders & Fyffes, Ltd.	Port Limon.	May 34	Stuyvesant	Royal Netherlands W. I. Mail.	Royal Netherlands W. I. Mail.	Puerto Colombia.
May 35	Advance	Panama Railroad Steamship Line.	Puerto Colombia.	May 35	Advance	Panama Railroad Steamship Line.	Panama Railroad Steamship Line.	Puerto Colombia.

PORT OF BALBOA.

Ship	Date	Vessel	From—	Line	Date	Vessel	Line	For—
May 26	Lady Sybil	International Petroleum Co.	Talara					

* Other than ships passing through the Canal.

Largest Cargo Carried Through the Canal.

The steamer *Bethore*, arriving at Balboa in the morning of May 29 and making the transit of the Canal on the same day, reported a cargo of 19,000 tons, the largest to have passed through the Canal on any ship to date. The previous record was 15,753 tons, carried by the steamship *Orca* of the Pacific Steam Navigation Company.

The cargo of the *Bethore* was iron ore, shipped from Cruz Grande, Chile, to New York. The ship is owned and operated by the Ore Steamship Corporation. It is one of several new steamers built for the company, which have been commented on considerably from the novelty of their having been built to carry oil in bulk, general cargo, or ore in the trade between the west coast of South America and the Atlantic coast of the United States and Mexico. The *Bethore*, however, transited the Canal on her southbound voyage in ballast, on May 7.

The *Bethore* is 550 feet in length by 72 feet beam, of 14,900 gross and 9,615 net tons. At the time of passing through the Canal on May 29 she was drawing 32 feet 6 inches of water.

Initial Sailing of China-American Line.

The steamship *Monmouth*, arriving at the Canal on May 25, from New York by way of Norfolk and Habana, bound for Hongkong, is operated by the China-American Line, a Chinese organization, and it is said that this is the opening of a regular service by the company between the Atlantic coast of North America and China.

The *Monmouth* is a British ship, owned by the Monmouth Steamship Company, of Toronto. She is a ship of 4,078 gross and 2,569 net tons, 375 feet in length, and at the time of passage through the Canal was carrying 4,000 tons of general cargo. Her crew consisted of 72, of whom 60 were Chinese, and she was carrying 39 Chinese passengers.

Notice to Mariners.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., May 22, 1922.

Effective July 1, the red sectors (from 160° to 200° covering Iguana Island, and from 35° to 60° covering N. and S. Fraile Rocks) will be discontinued.

Cape Mala Light will then show—White, flashing, all around the horizon. No other change.

JAY J. MORROW,
Governor.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Two Weeks Ending May 27, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
<i>Santa Tecla</i>	Grace Line.....	May 15.....	May 16.....	124	270
<i>Huasco</i>	South American Steamship Line.....	May 15.....	May 15.....		7
<i>Depere</i>	United States Shipping Board.....	May 16.....	May 17.....	166	
<i>Almazro</i>	Pacific Steam Navigation Co.....	May 17.....	May 17.....	3	
<i>Annaldo San Giorgio I.</i>	Italian Line.....	May 17.....	May 17.....	120	
<i>A. L. Kent</i>	Crowell & Thurlow.....	May 17.....	May 17.....		102
<i>Santa Ana</i>	Pacific Mail Steamship Co.....	May 19.....	May 19.....	6	27
<i>Colombia</i>	Pacific Mail Steamship Co.....	May 22.....	May 23.....	107	
<i>Laura C. Hall</i>	Pacific Metals Transportation Co.....	May 23.....	May 23.....	4	
<i>Casca</i>	Pacific Steam Navigation Co.....	May 25.....	May 25.....	5	
<i>Aysen</i>	Chilean Line.....	May 26.....	May 27.....	112	
<i>Manavi</i>	Pacific Steam Navigation Co.....	May 27.....	May 27.....		11
<i>San Francisco</i>	Johnson Line.....	May 27.....		284	
<i>Helder</i>	Royal Netherlands W. I. Mail.....	May 27.....	May 27.....	23	
<i>Lady Sybil</i>	International Petroleum Co.....	May 27.....		300	

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending May 27, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Venezuela.....	Royal Netherlands W. I. Mail.....	May 14.	May 14.	33	3,253
Abangares.....	United Fruit Co.....	May 14.	May 15.	(¹)	179
Huasco.....	Chilean Line.....		May 15.		239
Kina.....	East Asiatic Co.....	May 15.	May 15.	(¹)	58
Conde de Churruca.....	Anglo-Saxon Petroleum Co.....	May 15.	May 17.	6,150	(¹)
Parismina.....	United Fruit Co.....	May 15.	May 18.	1,065	115
Ulua.....	United Fruit Co.....	May 16.	May 17.	252	200
San Juan.....	Pacific Mail Steamship Co. A.....		May 17.		958
Mantaro.....	Peruvian Line.....		May 17.		463
Advance.....	Panama Railroad Steamship Line.....	May 16.		401	
Cristobal.....	Panama Railroad Steamship Line.....	May 16.		6,477	
Sixacola.....	United Fruit Co.....	May 17.	May 17.	242	1½
Carrillo.....	United Fruit Co.....	May 17.	May 18.	40	360
Norman Bridge.....	Pan-American Pet. and Transp. Co.....	May 17.	May 18.	6,000	(¹)
Almagro.....	Pacific Steam Navigation Co.....	May 17.	May 18.	895	253
Abangares.....	United Fruit Co.....	May 18.	May 18.	1	1
Moerdyk.....	Holland-American Line.....	May 18.	May 19.	67	119
Alvarado.....	Pacific Steam Navigation Co.....	May 18.	May 19.	119	28
Orita.....	Pacific Steam Navigation Co.....	May 18.	May 19.	(¹)	58
Santa Ana.....	Pacific Mail Steamship Co.....	May 18.	May 19.	199	231
Colon.....	Panama Railroad Steamship Line.....		May 19.		2,382
Solana.....	Pacific Mail Steamship Co.....	May 19.	May 20.	10,000	(¹)
Essequibo.....	Pacific Steam Navigation Co.....	May 19.	May 20.	349	62
Bologna.....	Italian Line.....	May 19.		84	
Sarpfos.....	Caribbean Steamship Line.....	May 19.	May 20.	233	(¹)
Ceres.....	Royal Netherlands W. I. Mail.....	May 19.		305	
San Bruno.....	United Fruit Co.....	May 20.	May 20.	22	152
Advance.....	Panama Railroad Steamship Line.....		May 21.		32
Ceres.....	Royal Netherlands W. I. Mail.....		May 21.		1,124
Turrialba.....	United Fruit Co.....	May 21.	May 22.	(¹)	93
Lobos.....	Pacific Steam Navigation Co.....	May 21.	May 22.	197½	(¹)
Santa Elisa.....	Grace Line.....	May 22.	May 22.	31	(¹)
Ucayali.....	Peruvian Line.....	May 22.	May 27.	1,920½	285
Michigan.....	French Line.....	May 22.	May 24.	19	(¹)
La Navarre.....	French Line.....	May 22.	May 26.	32	1
Laura C. Hall.....	Pacific Metals Corporation.....	May 23.		41	
Albaro.....	Italian Line.....	May 23.	May 23.	30	(¹)
Stuyvesant.....	Royal Netherlands W. I. Mail.....	May 23.	May 23.	22	(¹)
Tolosa.....	United Fruit Co.....	May 23.	May 24.	395	28
Jamaica.....	Pacific Steam Navigation Co.....	May 23.	May 25.	76	39
Colombia.....	Pacific Mail Steamship Co.....	May 23.	May 25.	1,507	477
Cartago.....	United Fruit Co.....	May 24.	May 25.	882	154
Gen. G. W. Goethals.....	Panama Railroad Steamship Line.....	May 24.		1,331	
San Gil.....	United Fruit Co.....	May 24.	May 25.	13	185
Oranian.....	Leyland Line.....	May 24.	May 27.	843	629
Cauca.....	Pacific Steam Navigation Co.....	May 25.		1,180	
Turrialba.....	United Fruit Co.....	May 25.	May 25.	5½	39
Antiochia.....	Hamburg-American Line.....	May 25.	May 27.	201	495
San Francisco.....	Johnson Line.....	May 26.	May 27.	597	(¹)
Albaro.....	Italian Line.....	May 26.		4½	
Helder.....	Royal Netherlands W. I. Mail.....	May 26.		95	
Advance.....	Panama Railroad Steamship Line.....	May 27.		245	
Coronado.....	Elders & Fyffes, Ltd.....	May 27.	May 27.	6	(¹)
Aysen.....	Chilean Line.....	May 27.		589	
Manavi.....	Pacific Steam Navigation Co.....		May 27.		107

* No cargo discharged.

* Pounds.

* No cargo laded.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended May 24:

Tug *Empire*, repair weather doors and dogs in deck house; repair air ports in deck house; repair scuttle covers on main deck; repair hatch covers on forward main deck; repair hatch cover on hatch leading to after storeroom; plug holes in main deck plate; repair 2 ventilator trunks on main deck, forward; overhaul smokestack guides; secure wood hatch cover on upper deck, test after capstan; connect up and test boiler; dress 9 chisels and 1 center punch; repair miscellaneous wrenches; manufacture 1 hatch and miscellaneous hatch strongbacks; steamships *Ansaldo San Giorgio I*, manufacture 20 piston rings; manufacture 1 new piston; convert 1 old piston to new design; manufacture packing box; *Scotia Maiden*, manufacture 2 spur gears; remetal 3 bearings.

PREVIOUSLY REPORTED.

Launch *Petrolia*, miscellaneous light repairs; dredge *No. 86*, miscellaneous heavy repairs; tug *Favorite*, convert from coal burner to oil burner.

The following vessels were at the Cristobal shops for repairs during the week ended May 29:

Steamships *La Navarre*, repair and mount pipe to boiler; *Stuyvesant*, repair ice machine; clear scupper, repair cabin water cans, etc.; *Albaro*, repair air and brine circulating pumps; repair piping, etc.; *Jamaica*, manufacture and fit 2 new piston valves and rings, 2 new valve spindles; face up control valve and control valve face for steering engine; fit new driving shaft to No. 2 port winch; fit new driving wheel to No. 1 winch; repair auxiliary feed pump exhaust pipe, etc.; U. S. Army transport *Edgemoor*, repair steering engine; repair copper winch pipe; steamship *Cauca*, repair ice machine, ballast pump, circulating pump engine, and dynamo; test boiler; repair piping and screening in various staterooms and officer's quarters; make 3 new piston rings for H. P. cylinder; repair port lights; renew part of auxiliary sanitary pump, suction pipe, etc.; motor schooner *Laura C. Hall*, dock and undock; scrape and paint hull; calk and plug worm holes, etc.; make new friction band for cargo winch; make 4 copper strainers and 1 muffler as sketch, etc.; steamship *Gen. G. W. Goethals*, repair sanitary line to officer's quarters and straighten winch eccentric; *West Isleta*, *Heffron*, *Crenatula*, and motor ship *San Francisco*, minor repairs.

Deceased Employee.

The estate of the following deceased employee of The Panama Canal is now in process of settlement, and any claims against this estate, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due him, should be presented at the office of the Administrator of Estates at once in order that the estate may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. This name will be published but once.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Joseph Beckford	30419	Jamaica	Corozal	Health Department ...	May 9, 1922.

Prices of Miscellaneous Supplies at Panama Canal Storehouses.

The following are prices to individuals and companies including the 25 per cent surcharge, effective May 15, 1922:

Commodities.	Unit.	Price.
Brass, bar, average.....	Lb.	\$0.20
Brass, sheet, average.....	Lb.	.31
Bronze, Tobin, average.....	Lb.	.27
Gasoline, motor grade.....	Gal.	.3125
Metal, yellow.....	Lb.	.34
Oakum, Navy, spun.....	Lb.	.11
Oakum, Navy, unspun.....	Lb.	.14
Oil, Diesel, at Cristobal only, in bulk, no surcharge.....	Bbl of 42 gals	\$ 5.00
Oil, fuel, at Balboa and Cristobal, in bulk, no surcharge.....	Bbl of 42 gals	1.70
Oil, ammonia, cylinder.....	Gal.	.40
Oil, burning.....	Gal.	1.08
Oil, engine, gas, in barrels.....	Gal.	.49
Oil, engine, gas, heavy, in drums.....	Gal.	.60
Oil, engine, gas, heavy, in barrels.....	Gal.	.60
Oil, engine, gas, extra heavy, in cases.....	Gal.	.60
Oil, engine, gas, extra heavy, in barrels.....	Gal.	.60
Oil, engine, gas, extra heavy, in drums.....	Gal.	.35
Oil, engine, gas, extra heavy, for motor schooners, in drums.....	Gal.	.40
Oil, kerosene, in drums.....	Gal.	.21
Oil, marine engine.....	Gal.	1.04
Oil, marine engine.....	Gal.	.68
Paint, lead, white, dry.....	Lb.	.09
Paint, lead, white, in oil.....	Lb.	.09
Paint, zinc, white, dry.....	Lb.	.15
Paint, zinc, white, in oil.....	Lb.	.124
Grease, gear, chain and wire rope, lubricating.....	Lb.	.09
Grease, yellow, cup, No. 3.....	Lb.	.11
Grease, yellow, cup, No. 5.....	Lb.	.09
Soda, ash.....	Lb.	.03
Waste, cotton, colored.....	Lb.	.14
Waste, cotton, white.....	Lb.	.15

Official Circulars.**Acting Auditor.**

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., May 22, 1922.

To all concerned—Effective to-day, and during the absence of Mr. H. A. A. Smith on leave, Mr. Elwyn Greene will act as Auditor of The Panama Canal.

JAY J. MORROW,
Governor.

Stock of Material and Supplies.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., May 19, 1922.

TO HEADS OF DEPARTMENTS AND DIVISIONS:

It is necessary to reduce to a minimum, consistent with the proper maintenance and operation of the Panama Canal and the various business activities carried on, the value of the stock of material and supplies in the general storehouses and in the possession of divisions unapplied to the work. The amount of the appropriation to be made for the maintenance and operation of the Canal for the fiscal year ending June 30, 1923, has been fixed on the assumption that \$1,000,000 of the total expenditures of the fiscal year would be provided from a reduction in the stock on hand by using that amount of material in excess of purchases made.

The requirements as above set forth make it necessary to fix a limit on the value of unapplied stock of material and supplies that may at any time be in the possession of departments and divisions. They also make it necessary to place on the Supply Department final and complete responsibility for ordering material and maintaining stock.

The following statement shows the value of the stock of material and supplies in the possession of various divisions of the Department of Operation and Maintenance as of June 30, 1921, March 31, 1922, and the value which must not be exceeded during the fiscal year 1923, unless an increase is necessary for special work and special authority from the Governor is obtained in advance:

DIVISION.	June 30, 1921.	March 31, 1922.	Maximum, 1923.
Locks Operation.....	\$424,068.19	\$401,467.93	\$375,000.00
Electrical.....	52,149.07	29,524.13	25,000.00
Municipal Engineering.....	109,899.22	69,517.52	60,000.00
Dredging.....	68,502.08	30,945.39	30,000.00
Mechanical.....	49,961.77	38,389.23	40,000.00
Marine.....	17,267.58	9,441.24	10,000.00
Motor Car Repair Shop.....	3,615.30	715.34	3,000.00
Constructing Quartermaster.....			10,000.00
Dams and Backfills...	367.41	298.41	500.00

No material will be purchased if material on hand will serve the purpose with a reasonable degree of satisfaction. Final and complete responsibility for determining whether new material shall be purchased is vested in the Supply Department, except that all requisitions for the purchase of material are subject to the approval of the Engineer of Maintenance as provided in Circular 660-57 and except that the decisions of the Supply Department on the usability of the material on hand are subject to reconsideration

by the Governor. The Supply Department is also vested with complete responsibility for the maintenance of the stock of material and supplies.

JAY J. MORROW,
Governor.

District Dentists.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., May 23, 1922.

CIRCULAR NO. 622-4:

1. Circular No. 622-1, of December 10, 1917, and Circular No. 622-2, of February 16, 1918, providing for certain free dental work upon employees and school children, are hereby canceled, effective July 1, 1922. Repair work performed by district dentists upon employees, required as a result of injuries received in the line of duty, will be charged to the Accounting Department, Claim Officer, who will secure reimbursement from the United States Employees' Compensation Commission.

2. Effective July 1, 1922, a rental charge will be made against district dentists for office room and office furniture and equipment which may be assigned by The Panama Canal to such dentists for their use.

JAY J. MORROW,
Governor.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton; but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;
(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity, as fast as the ships can take it. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

Scrap Burlap Bagging.

The Supply Department has on hand, available for sale, at the general storehouse, Balboa, a large quantity of scrap burlap bagging included in which are a quantity of clean but torn burlap bags.

This material is suitable for packing furniture, etc., and is offered at a price of 3 cents per pound put up in bales averaging 250 pounds each, or in smaller quantities if desired.

Arrangements for purchase should be made direct with the General Storekeeper, Balboa, C. Z.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in *The Panama Canal Record*. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars to those receiving *The Panama Canal Record*. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Typewriters For Sale.

The Supply Department has on sale a limited number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, Supply Department, Administration Building, Balboa Heights.

Binders for The Panama Canal Record.

Cardboard covers, punched and fitted with brass fasteners, forming binders for *THE PANAMA CANAL RECORD*, are offered for sale at 25 cents a set, for the benefit of those who wish to keep a file of the issues for ready reference. Orders may be addressed to The Panama Canal, Balboa Heights, Canal Zone, or The Panama Canal, Washington, D. C.

Sale of Cattle.

Grade Holstein bull calves 1 to 3 months old from registered sires. Also grade Hereford and Durham bulls and heifers 6 months to 2 years old. Sales will be made upon first satisfactory offer. For further information inquire Superintendent, Cattle Industry, Room 269, Administration Building, Balboa Heights.

Empty Barrels For Sale.

Address inquiries to Chief Quartermaster. The Panama Canal, Balboa Heights, C. Z.

Sale of Lumber.

The Panama Canal has on hand at Balboa storehouse considerable quantities of 1" x 6", 1" x 8", and 1" x 10", dressed lumber, Douglas fir, grade 1, select common. Further information will be furnished by General Storekeeper, Balboa, or at office of Chief Quartermaster, Balboa Heights.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Mail Steamship Company, Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line). The Pacific Mail charges \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

Hours of Departure of Passenger Trains.

Following are the hours of departure of the passenger trains of the Panama Railroad running between the Atlantic and the Pacific:

From Colon: 9.10 a. m., 12.15 p. m., 4 p. m.

From Panama: 7 a. m., 12.15 p. m., 6.10 p. m.

The trains leaving at 12.15 p. m. do not run on Sundays and holidays; the others are daily.

Cable Address of The Panama Canal.

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address

The Panama Canal Record, Balboa Heights, Canal Zone, or

The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office

at Cristobal, C. Z., under the Act of March 3, 1879.

Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., June 7, 1922.

No. 43.

Increased Canal Traffic in May.

A total of 243 ocean-going commercial vessels transited the Canal during the month of May. The tolls on them amounted to \$1,015,057.37, as compared with \$953,256.11 tolls for 230 vessels last month, and \$835,882.77 for 210 vessels in the month of May last year.

The revenue from tolls during May has been exceeded during but 3 months since the opening of the Canal, viz., January, March, and October of 1921, when the tolls were, respectively, \$1,095,857.46, \$1,105,536.55, and \$1,047,935.62.

The tons of cargo carried by vessels transiting the Canal during May aggregated 1,158,507 tons. With the exception of the cargo in January, 1921 (1,177,053 cargo tons) this is the greatest cargo tonnage through the Canal during any month since its opening.

In addition to the above commercial traffic, 6 small nonseagoing launches transited the Canal during the month, on which tolls of \$12.75 were paid, and 16 vessels passed through the Canal free of tolls. Of the vessels transiting the Canal without payment of tolls, 14 were noncommercial vessels of the United States Government, 1 was a foreign commercial vessel passed through the Canal free of tolls in order to have repairs made at the Balboa dry dock, and 1 was a government vessel owned by the Republic of Colombia.

American Tonnage Through Canal in May Exceeds All Previous Records.

During the past month, all previous monthly records of American tonnage through the Canal were exceeded. The vessels of United States registry which transited the Canal, numbering 108, out of the total of 243, had an aggregate net tonnage of 511,621, Panama Canal measurement, and carried 608,539 tons of cargo. Tolls paid by these vessels totaled \$506,148.97. Vessels of American registry furnished practically half of the tonnage through the Canal, paid approximately half of the tolls, and carried slightly more than half of the total cargo passing through the Canal. The number of American vessels, 108, was exceeded in 5 previous months; the record is 121, in August, 1920.

The three principal trade areas covered by American vessels during the month were:

(a) Between United States coastwise ports, a total of 55 vessels, aggregating 260,946 net tons, Panama Canal measurement, and carrying 281,447 tons of cargo.

(b) Between the east coast of the United States and the Orient, a total of 16 vessels, aggregating 86,573 net tons, Panama Canal measurement, and carrying 141,285 tons of cargo; and

(c) Between the east coast of the United States and the west coast of South America, a total of 16 vessels, aggregating 75,932 net tons, Panama Canal measurement, and carrying 76,360 tons of cargo.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, June 3, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Chas H Cramp	28	8 30	28	9 00	28	16 15	28	18 33	American.	Atl. Gulf & Pacific S. S. Co. (S. B.)	404.6	53.9	22.0	New York.	Seattle.	General.	4,167	6,755	4,750
Cadby	28	1 03	28	10 55	28	17 24	28	20 00	American.	Standard Oil Co.	445.1	55.0	19.0	New York.	Talara.	Ballast.	6,437	4,442	
Californian	28	10 53	28	11 15	28	18 15	28	19 23	American.	American-Hawaiian Line.	413.5	59.8	24.0	Philadelphia.	Portland.	General.	6,000	8,567	6,020
Helgan	28	9 50	28	11 40	28	19 19	28	20 55	American.	Tampa Interocean S. S. Co. (S. B.)	440.0	56.0	31.0	Baltimore.	Kobe.	General.	9,652	8,349	6,201
Takekayo Maru	28	13 00	28	6 10	29	13 43	29	14 55	Japanese.	Nippon Yusen Kaisha.	445.0	58.0	28.0	New York.	Kobe.	General.	8,303	7,596	5,456
Arcturion	28	23 08	29	7 07	29	14 43	29	16 22	British.	N. Atl. & West. S. S. Co. (S. B.)	390.0	54.0	18.0	Philadelphia.	Los Angeles.	General.	2,391	6,204	4,314
Wishu Maru	28	14 17	29	10 30	29	15 02	29	19 37	British.	W. R. Smith.	411.7	54.5	28.9	Port Arthur.	Manila.	Case oil.	7,900	6,957	5,133
Santa Barbara	28	17 45	29	11 45	29	19 23	29	20 40	American.	Grace Line.	404.6	53.9	28.4	Baltimore.	Seattle.	General, steel.	8,661	6,789	4,746
Laura C. Hall	28	19 25	30	6 07	30	13 23	31	7 43	British.	Pacific Metals Corp.	81.0	25.6	9.0	Cristobal.	Buenaventura.	General.	33	132	72
Alsace	28	15 14	29	6 10	30	16 10	30	18 55	French.	Valoutiere & Co.	192.3	40.3	14.0	Marseilles.	Amapala.	Ballast.	1,140	854	
Aysen	27	16 07	30	10 57	30	17 27	30	19 30	Chilean.	Chilean Line.	380.0	44.3	22.10	Cristobal.	Valparaiso.	General.	575	4,535	3,068
Robin Good-fellow	29	21 18	30	11 10	30	19 34	30	21 05	American.	Seas Shipping Co.	424.8	55.2	29.0	New York.	Seattle.	General.	9,456	7,473	5,535
Edgemoor	29	19 31	30	6 05	31	14 59	31	16 10	American.	United States Army.	409.6	54.2	26.2	New York.	Honolulu.	Supplies, etc.	6,117		
Sciota	30	6 12	31	7 30	31	12 28	31	14 25	American.	United States Navy.	149.0	30.0	9.0	Cristobal.	Cape Mala.	General.	1,664	5,926	4,178
Enador	30	21 10	31	8 47	31	15 58	31	17 45	American.	Grace Line.	380.6	48.7	23.3	Baltimore.	San Francisco.	General.	3,689	5,726	4,086
Santa Teresa.	30	10 31	31	8 50	31	16 35	31	17 50	American.	Pacific Mail Steamship Co.	360.2	51.6	27.0	New York.	Takahama.	General.	3,800	3,400	2,404
Stanley Dollar.	30	10 57	31	8 50	31	16 35	31	17 50	American.	Dollar Steamship Co.	298.8	44.6	26.0	New York.	Los Angeles.	General.	908	6,021	4,108
Crenatula	28	17 25	31	10 27	31	19 13	1	6 30	British.	Anglo-Saxon Petroleum Co.	400.0	52.3	21.2	Malta.	San Francisco.	Ballast.			
Cauca	25	21 05	1	6 10	1	12 53	1	17 45	British.	Pacific Steam Navigation Co.	246.0	35.0	17.3	Cristobal.	Champerico.	General.			
Cleveland	31	14 05	1	7 25	1	12 53	1	17 45	American.	United States Navy.	308.0	40.0	17.3	Cristobal.	Balboa.	General.	2,099	5,112	3,511
Apple Branch	1	5 38	1	11 45	1	13 01	1	19 17	British.	F. & W. Ritson.	370.0	51.6	20.0	London.	Valparaiso.	General.	7,232	7,983	5,882
Willolo	1	13 29	2	6 05	2	14 06	2	15 15	American.	Williams Steamship Co.	434.0	57.7	27.0	New York.	Los Angeles.	General.	2,283	12,207	7,942
Oroona	1	17 40	2	8 15	2	15 55	2	19 40	British.	Pacific Steam Navigation Co.	511.6	62.0	26.10	Liverpool.	Valparaiso.	General.	8,600	6,066	4,507
Nurturston	2	0 20	2	10 25	2	18 20	2	19 54	British.	West Hartlepool Steam Nav. Co.	415.0	55.0	27.4	Baltimore.	Yokohama.	Steel.	6,480	6,243	4,500
Hasuna Maru	2	8 45	2	12 55	2	20 54	2	22 30	Japanese.	Osaka Shosen Kaisha.	407.0	50.0	26.0	New York.	Singapore.	General.	6,000		
Gladiator	2	5 06	3	6 18	3	13 03	3	14 30	British.	Harrison Line.	405.0	52.0	24.9	Liverpool.	Los Angeles.	General.			
Julia Luckenbach	2	4 13	3	7 40	3	16 30	3	16 30	American.	Luckenbach Line.	436.0	57.0	28.0	New York.	San Francisco.	General.	7,847	8,543	6,402
Canada Maru	3	10 10	3	10 30	3	17 43	3	19 09	Japanese.	Osaka Shosen Kaisha.	400.0	51.8	27.0	New Orleans.	Kobe.	General.	5,064	5,999	4,101
Florence Luckenbach	3	8 40	3	10 45	3	18 16	3	19 19	American.	Luckenbach Line.	401.8	52.0	24.11	New Orleans.	Los Angeles.	General.	7,627	6,002	4,621

* Motor ship.

* Motor schooner.

* Transport.

* Tug.

* Cruiser.

* Structural material and machinery.

Financial Receipts and Disbursements, April, 1922.

BALBOA HEIGHTS, C. Z., May 31, 1922.

The Honorable, the Secretary of War, Washington, D. C.

SIR: Herewith is a report showing the commissary sales, financial receipts, and expenditures, and of the cash balance available in The Panama Canal appropriations for the month of April, 1922, as compared with the preceding month, and with the corresponding month of last year:

	April, 1922.	March, 1922.	April, 1921.
Cash balance available for expenditures in Canal appropriations on last day of month	\$11,610,223.49	\$11,741,940.27	\$8,020,685.58
Payments made from appropriations:			
By paymaster on the Isthmus	893,590.92	891,747.77	1,570,092.07
By Disbursing Clerk, Washington, D. C.	54,084.74	97,040.53	737,709.52
To the Panama Railroad (for commissary books)	177,321.61	173,358.01	307,802.49
Collections on the Isthmus:			
Repaid to appropriations	724,527.71	513,416.00	1,031,281.31
Commissary and other trust funds	179,578.57	175,805.94	309,877.44
Tolls	953,293.96	956,734.11	928,007.79
Sales of water	2,874.90	32.75	14,430.50
Postal receipts	9,131.16	10,069.52	10,617.87
Licenses, taxes, court fees, fines, etc.	2,791.90	3,009.00	4,381.83
Sales of construction material and equipment		3,091.00	
Total collections on Isthmus	1,872,198.20	1,662,158.32	2,298,596.74
Collections by the Disbursing Clerk, Washington, D. C.	25,228.17	10,785.91	127,292.71
Deposits with the assistant treasurer, United States	41,266.25	57,300.00	49,700.00
Canal Zone and miscellaneous funds:			
Receipts:			
Money order funds	135,890.32	129,898.22	158,912.94
Trust funds	123.44	2,200.00	813.21
Clubhouse funds	32,384.61	28,903.13	42,873.98
Interest	1,364.13	1,176.43	5,181.05
Total receipts	169,762.50	162,177.78	207,781.18
Disbursements:			
Money order funds	106,500.00	130,950.00	221,953.00
Trust funds	315.76	1,173.85	2,201.22
Clubhouse funds	24,894.43	24,951.08	38,522.73
Interest	719.64	442.78	769.86
Postal savings	250.00		
Total disbursements	132,679.83	157,517.71	263,446.81
Pay roll on the Isthmus:			
Maintenance and operation	596,232.81	627,578.80	1,036,037.67
Sanitation	69,741.60	71,741.20	86,567.12
Civil government	65,745.80	68,387.15	83,597.59
Totals	731,720.21	767,707.15	1,206,202.38
Requisitions for purchases in the United States	109,200.84	351,290.94	238,996.12
Sales of commissary supplies:			
To The Panama Canal	72,814.34	75,307.75	127,727.43
To steamships other than those of the United States Government and Panama Railroad	33,681.25	31,294.52	53,432.69
To the Panama Railroad, including its steamships and the Hotel Washington	17,510.44	18,719.85	20,056.27
To the United States Government, including the Army and Navy	84,270.46	84,125.92	134,007.10
To individuals and companies through charge accounts	24,503.46	27,159.72	26,036.10
To individuals purchasing coupons	324,762.06	317,701.26	484,426.83
Totals	557,542.01	554,309.02	845,686.42

Respectfully,

JAY J. MORROW, Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 3, 1922.

The Master of the steamship *Argosy* reports at 11 o'clock, a. m., to-day, a tree 70 feet long, with large branches attached, floating 2½ miles east of Taboguilla Island, Panama Bay.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the week ended June 5:

Steamship *Salvador*, repair Nos. 1 and 2 'tween deck hatches; repair forepart of after deck house; calk forward well deck; supply and fit new cleats for stanchions on accommodation ladder; renew accommodation ladder platform; *Acajulla*, fit new leather straps to the windows of captain's room; furnish strum plate for engine room bilge manifold; patch and re-rivet to bulkhead steam pipe casing leading to forecastle head; repair door frames for sailors' and firemen's forecastle and water closets; manufacture 1 scum valve and stem; *Advance*, furnish lumber as directed; *Bessemer City*, repair 4 copper coils; *Heredia*, make 4 piston rings for air pump; tug *Tavernilla*, miscellaneous repairs as directed by master; steamships *Orcoma*, manufacture pipe for feed pump; *Parismina*, clear out drains, etc.; *Panama*, reforge davit crank handle for No. 7 lifeboat; cut off at top stem and sternpost on Nos. 5 and 7 lifeboats to fit boat tackle; refasten scupper lip on shell starboard side, after end of saloon; make new stem for valve on brine line; renew bales on 2 ash buckets; *Jamaica*, repair 2 sanitary pipes.

Treaty Between the United States and Colombia.

*By the President of the United States of America—A Proclamation:*¹

Whereas a Treaty between the United States of America and the Republic of Colombia, for the settlement of their differences arising out of the events which took place on the Isthmus of Panama in November, 1903, was concluded by their respective Plenipotentiaries at Bogotá on the sixth day of April in the year one thousand nine hundred and fourteen, which Treaty, in the English and Spanish languages,² and as amended by the Senate of the United States, is word for word as follows:

Treaty between the United States of America and the Republic of Colombia for the settlement of their differences arising out of the events which took place on the Isthmus of Panama in November, 1903.

The United States of America and the Republic of Colombia, being desirous to remove all the misunderstandings growing out of the political events in Panama in November, 1903; to restore the cordial friendship that formerly characterized the relations between the two countries, and also to define and regulate their rights and interests in respect of the interoceanic canal which the Government of the United States has constructed across the Isthmus of Panama, have resolved for this purpose to conclude a Treaty and have accordingly appointed as their Plenipotentiaries:

His Excellency the President of the United States of America, Thaddeus Austin Thomson, Envoy Extraordinary and Minister Plenipotentiary of the United States of America to the Government of the Republic of Colombia; and

His Excellency the President of the Republic of Colombia, Francisco José Urrutia, Minister for Foreign Affairs; Marco Fidel Suárez, First Designate to exercise the Executive Power; Nicolás Esguerra, Ex-Minister of State; José María González Valencia, Senator; Rafael Uribe Uribe, Senator; and Antonio José Uribe, President of the House of Representatives;

Who, after communicating to each other their respective full powers, which were found to be in due and proper form, have agreed upon the following:

ARTICLE I.

The Republic of Colombia shall enjoy the following rights in respect to the interoceanic Canal and the Panama Railway, the title to which is now vested entirely and absolutely in the United States of America, without any incumbrances or indemnities whatever.

1. The Republic of Colombia shall be at liberty at all times to transport through the interoceanic Canal its troops, materials of war and ships of war, without paying any charges to the United States.

2. The products of the soil and industry of Colombia passing through the Canal, as well as the Colombian mails, shall be exempt from any charge or duty other than those to which the products and mails of the United States may be subject. The products of the soil and industry of Colombia, such as cattle, salt and provisions, shall be admitted to entry in the Canal Zone, and likewise in the islands and mainland occupied or which may be occupied by the United States as auxiliary and accessory thereto, without paying other duties or charges than those payable by similar products of the United States.

¹ Published as Panama Canal circular No. 601-130.

² The original proclamation also contains the Spanish version which has been omitted from this reprint.

3. Colombian citizens crossing the Canal Zone shall, upon production of proper proof of their nationality, be exempt from every toll, tax or duty to which citizens of the United States are not subject.

4. Whenever traffic by the Canal is interrupted or whenever it shall be necessary for any other reason to use the railway, the troops, materials of war, products and mails of the Republic of Colombia, as above mentioned, shall be transported on the Railway between Ancon and Cristobal or on any other Railway substituted therefor, paying only the same charges and duties as are imposed upon the troops, materials of war, products and mails of the United States. The officers, agents and employees of the Government of Colombia shall, upon production of proper proof of their official character or their employment, also be entitled to passage on the said Railway on the same terms as officers, agents and employees of the Government of the United States.

5. Coal, petroleum and sea salt, being the products of Colombia, for Colombian consumption passing from the Atlantic coast of Colombia to any Colombian port on the Pacific coast, and vice-versa, shall, whenever traffic by the Canal is interrupted, be transported over the aforesaid Railway free of any charge except the actual cost of handling and transportation, which shall not in any case exceed one half of the ordinary freight charges levied upon similar products of the United States passing over the Railway and in transit from one port to another of the United States.

ARTICLE II.

The Government of the United States of America agrees to pay at the City of Washington to the Republic of Colombia the sum of twenty-five million dollars, gold, United States money, as follows: The sum of five million dollars shall be paid within six months after the exchange of ratifications of the present treaty, and reckoning from the date of that payment, the remaining twenty million dollars shall be paid in four annual installments of five million dollars each.

ARTICLE III.

The Republic of Colombia recognizes Panama as an independent nation and taking as a basis the Colombian Law of June 9, 1855, agrees that the boundary shall be the following: From Cape Tiburón to the headwaters of the Rio de la Miel and following the mountain chain by the ridge of Gandi to the Sierra de Chugargun and that of Mali going down by the ridges of Nigue to the heights of Aspave and from thence to a point on the Pacific half way between Cocalito and La Ardita.

In consideration of this recognition, the Government of the United States will, immediately after the exchange of the ratifications of the present Treaty, take the necessary steps in order to obtain from the Government of Panama the despatch of a duly accredited agent to negotiate and conclude with the Government of Colombia a Treaty of Peace and Friendship, with a view to bring about both the establishment of regular diplomatic relations between Colombia and Panama and the adjustment of all questions of pecuniary liability as between the two countries, in accordance with recognized principles of law and precedents.

ARTICLE IV.

The present Treaty shall be approved and ratified by the High Contracting Parties in conformity with their respective laws, and the ratifications thereof shall be exchanged in the city of Bogotá, as soon as may be possible.

In faith whereof, the said Plenipotentiaries have signed the present Treaty in duplicate and have hereunto affixed their respective seals.

Done at the city of Bogotá, the sixth day of April in the year of our Lord nineteen hundred and fourteen.

[SEAL.]
[SEAL.]
[SEAL.]
[SEAL.]
[SEAL.]
[SEAL.]
[SEAL.]

THADDEUS AUSTIN THOMSON
FRANCISCO JOSÉ URRUTIA
MARCO FIDEL SUÁREZ
NICOLÁS ESGUERRA
JOSÉ M. GONZÁLEZ VALENCIA
RAFAEL URIBE URIBE
ANTONIO JOSÉ URIBE

And whereas the advice and consent of the Senate of the United States to the ratification of the said Treaty was given also with the "understanding, to be made a part of such treaty and ratification, that the provisions of section 1 of Article I of the treaty granting to the Republic of Colombia free passage through the Panama Canal for its troops, materials of war and ships of war, shall not apply in case of war between the Republic of Colombia and any other country";

And whereas the said Treaty as amended by the Senate and the above recited understanding of the Senate made a part of such Treaty have been duly ratified on both parts, and the ratifications of the two Governments were exchanged at Bogotá, on the first day of March, one thousand nine hundred and twenty-two;

Now, therefore, be it known that I, Warren G. Harding, President of the United States of America, have caused the said Treaty, as amended, and the said understanding, made a part thereof, to be made public, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In Testimony whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington, this thirtieth day of March, in the year of our Lord one thousand nine hundred and twenty-two, and of the independence of the United States of America the one hundred and forty-sixth.

WARREN G. HARDING.

By the President:

CHARLES E. HUGHES, *Secretary of State*.

PROTOCOL OF EXCHANGE.

The undersigned Plenipotentiaries having met for the purpose of exchanging the ratifications of the Treaty signed at Bogotá, on April 6, 1914, between the United States of America and Colombia, providing for the settlement of differences arising out of the events which took place on the Isthmus of Panama in November, 1903, and the ratifications of the Treaty aforesaid having been carefully compared and found exactly conformable to each other, the exchange took place this day in the usual form.

With reference to this exchange the following statement is incorporated in the present Protocol in accordance with instructions received:

1. In conformity with the final Resolution of the Senate of the United States in giving its consent to the ratification of the Treaty in question, the stipulation contained in the first clause of Article one by which there is ceded to the Republic of Colombia free passage of its troops, materials of war and ships of war through the Panama Canal, shall not be applicable in case of a state of war between the Republic of Colombia and any other country.

2. The said final Resolution of the Senate of the United States signifies, as the Secretary of State in effect stated in the note which he addressed to the Colombian Legation in Washington on the 3rd day of October, 1921, that the Republic of Colombia will not have the right of passage, free of tolls, for its troops, materials of war and ships of war, in case of war between Colombia and some other country, and consequently, the Republic of Colombia will be placed, when at war with another country, on the same footing as any other nation under similar conditions, as provided in the Hay-Pauncefote Treaty concluded in 1901; and that, therefore, the Republic of Colombia will not by operation of the declaration of the Senate of the United States above mentioned, be placed under any disadvantage as compared with the other belligerent or belligerents, in the Panama Canal, in case of war between Colombia and some other nation or nations. With this understanding the said Resolution has been accepted by the Colombian Congress in accordance with the dispositions contained in Article two of Law fifty-six of 1921, "by which is modified Law number fourteen of 1914" approving the Treaty.

IN WITNESS WHEREOF, they have signed the present Protocol of Exchange and have affixed their seals thereto.

DONE at Bogotá, this first day of March, one thousand nine hundred and twenty-two.

[SEAL.]
[SEAL.]

HOFFMAN PHILIP
ANTONIO JOSÉ URIBE

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending June 3, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Remus.....	Latin-American Line.....	May 28.....	May 31.....	700	628
Laura C. Hall.....	Pacific Metals Transportation Co.....	May 30.....	May 30.....		45
Ecuador.....	Pacific Mail Steamship Co.....	May 31.....	May 31.....		14
Hwah Ping.....	Chinese Government.....	May 31.....	June 2.....	382	
Acajutla.....	Pacific Steam Navigation Co.....	June 1.....	June 1.....	2	
Cauca.....	Pacific Steam Navigation Co.....	June 1.....	June 1.....		35
Hoboken.....	Erie Basin Towing and Hoisting Co.....	June 2.....		2,000	

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity, as fast as the ships can take it. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

Typewriters For Sale.

The Supply Department has on sale a limited number of Underwood typewriters, second hand, models 4 and 5. Prices range from \$20 to \$35. Inspection can be made by applying to Storekeeper, Supply Department, Administration Building, Balboa Heights.

Scrap Burlap Bagging.

The Supply Department has on hand, available for sale, at the general storehouse, Balboa, a large quantity of scrap burlap bagging included in which are a quantity of clean but torn burlap bags.

This material is suitable for packing furniture, etc., and is offered at a price of 3 cents per pound put up in bales averaging 250 pounds each, or in smaller quantities if desired.

Arrangements for purchase should be made direct with the General Storekeeper, Balboa, C. Z.

Sale of Cattle.

Grade Holstein bull calves 1 to 3 months old from registered area. Also grade Hereford and Durham bulls and heifers 6 months to 2 years old. Sales will be made upon first satisfactory offer. For further information inquire Superintendent, Cattle Industry, Room 269, Administration Building, Balboa Heights.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 545.

PORT OF CRISTOBAL—continued.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	From—	Date.	Vessel.	Line.
May 31	Tivives	Colombian ports.	May 31	Poseidon.	Royal Netherlands W. I. Mail.
May 31	Metapan	New York via Kingston.	June 1	Heredia	United Fruit Co.
June 1	Arenas	Bocas del Toro.	June 1	Tivives	United Fruit Co.
June 2	Panama	New York via Haiti.	June 1	Arenas	United Fruit Co.
			June 1	Metapan	United Fruit Co.
PORT OF BALBOA.					
May 28	Remus	Talca.	May 31	Remus	Latin American Line.
May 31	Hwah Ping.	Hongkong.	June 2	Hwah Ping	Chinese Government.
May 31	Guardian	Callao.	June 2	Lady Sybil	International Petroleum Co.
					San Francisco.
					Guaymas.
					Talara.

*Other than ships passing through the Canal.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., June 14, 1922.

No. 44.

Refrigerator Steamship Service from North Pacific Coast to New York and Boston.

The *Fisheries Service Bulletin*, issued by the Bureau of Fisheries, Department of Commerce of the United States, published under the above heading the following article in its issue of March 1:

H. F. Taylor, of the division of fishery industries, recently visited and inspected at the wharf in New York City the steamship *Neponset*, a large refrigerator ship of the Elder Steel Steamship Company and a sister to the steamer *Deerfield*, which landed a cargo of frozen fish from Seattle via the Panama Canal in January. The *Neponset* docked February 22 with a cargo of frozen fish, mostly salmon, steelheads, halibut, mild-cured salmon, with other perishable freight, including apples, lemons, etc., this landing representing the second trip made in this newly instituted trade.

The *Neponset* (and also the sister ship *Deerfield*) is of 7,622 gross register, or 11,500 deadweight tonnage, and 410,000 cubic feet capacity, all insulated with cork and mineral wool. She is 450 feet long over all with 57-foot beam. She can make 12 knots, and has an average of all trips to date of $10\frac{1}{2}$ knots, the trip from Seattle to New York requiring about a month, including stops. She can carry about 6,000 tons of frozen fish. Fuel oil is used, with 4 boilers, 1 of which is sufficient to operate the refrigerating machinery.

The vessel's refrigerating equipment consists of three 80-ton single-acting carbon dioxide compressors, direct-connected, double expansion steam driven. The condensers are of copper tubes submerged in sea-water tanks. The brine cooler evaporators are identical with the condensers, except that iron pipe is used instead of copper. Circulation of calcium chloride brine is provided in such a way that each section of coil in each room is independent and can be operated and controlled from outside the holds, and each section has its own thermometer. The holds are piped for brine overhead and on sides, it being possible to maintain a temperature of from -20° to $+80^{\circ}$ F. Temperature at the time of visit was about 12° F. The weight of the refrigerating machinery, insulation, etc., is about 1,700 tons. The fish cargo was all boxed, and appeared to be in first-class condition, the holds being cold, dark, and dry. The fish, so far as examined, showed no drying or rust.

The freight charges on fish from Seattle to New York are $1\frac{1}{4}$ cents per pound, or \$35 per ton, plus certain charges which bring the total to \$37.20 per ton. Corresponding railroad charges between the same points, including icing en route, are said to be \$57.83, which, if correct, shows an apparent saving of \$20.63 by steamer transportation. The disadvantage is, of course, in the longer time of delivery, which must be considered in connection with the very safe preservation en route. Transportation at reasonable rates is a matter of acute interest to the fisheries at present, and for that reason the inauguration of this new service is timely and important.

These vessels are prepared to take cargoes not only from Seattle, but from any other Pacific port offering sufficient cargo. This fact is of importance to localities like Ketchikan without adequate railroad facilities.

In the records of traffic through the Canal, shipments of frozen fish have been classified, so far, with miscellaneous cold storage shipments.

An inquiry was made by the Canal to check the accuracy of the figures of \$57.83 as the cost per ton for shipment by railroad. One railroad quoted a carload rate of \$2.50 per 100 pounds. On the basis of a ton of 2,000 pounds this would be \$50 a ton; for a ton of 2,240 pounds, \$56. The time for delivery by railroad is quoted as about 15 days.

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, June 10, 1922.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Advance	27	12 23	4	6 08	4	12 20	4	13 45	American	Panama Railroad Steamship Line	295.0	38.5	16.8	Pto. Colombia	Buenaventura.	General	64	2,947	2,113
Actual	3	10 19	4	6 15	4	13 57	4	15 44	French	Compagnie de Boleo	320.2	40.7	24.3	Tampico	Santa Rosaia.	Crude oil	3,000	3,141	2,096
Florida	3	10 55	4	7 15	4	14 37	4	17 46	American	United States Army (S. B.)	409.6	54.2	23.6	New York	Honolulu	Military supplies	3,985	7,486	5,747
Alberdrie	3	22 53	4	7 35	4	15 35	4	16 36	British	Imperial Oil Co.	433.3	60.0	16.0	Montreal	Talara	Ballast	8,491	6,096	
Esch	4	6 10	4	8 33	4	16 10	4	17 09	American	Standard Oil Co.	410.0	56.0	23.0	New York	Los Angeles.	General	6,000	8,243	6,266
Isanta	4	22 48	4	9 15	4	16 10	4	19 46	British	Pacific Steam Navigation Co.	220.0	34.0	13.7	Santa Marta.	Tumaco.	General, salt	606	1,187	622
Port McQuarie	4	9 35	4	10 54	4	17 29	4	18 34	British	Commonwealth and Dom. Line.	426.0	54.0	25.0	New York	Brisbane.	General	3,107	5,533	4,005
Nawa	4	22 15	4	11 44	4	18 39	4	13 50	British	Shaw, Saville & Albion Co.	459.5	60.5	26.4	London	Wellington.	General	3,623	10,035	7,504
Panama	5	6 00	5	13 28	5	13 28	5	14 40	American	United States Navy				Cristobal	Balboa.	General	2,745	5,988	4,226
American	5	12 36	5	6 15	5	13 34	5	15 50	American	American-Hawaiian Line	406.8	51.1	20.0	Boston	Portland.	General	3,420	2,823	1,730
Santa Lofalia	5	12 40	5	6 20	5	14 42	5	16 45	American	American and Cuban S. S. Line.	251.0	43.6	23.0	Baltimore	Los Angeles.	General	2,440	2,381	1,458
Italia	5	17 30	5	8 40	5	15 31	5	16 45	Swedish	Swedish Lloyd's	283.0	41.0	19.0	New Orleans.	Talcahuano.	General	296	4,803	2,951
Urumbaba	2	14 52	6	11 05	6	17 39	6	21 30	Peruvian	Peruvian Line	381.0	46.0	18.2	Cristobal	Catun Lake.	General			
Barge N. 32.	6	6 50	6	6 50	6	21 20	7	17 25	American	United States Navy				Cristobal					
Port Chalmers	6	14 15	7	6 18	7	15 29	7	14 30	British	Commonwealth and Dom. Line	468.0	53.6	22.4	London	Lyttelton.	General	2,383	8,264	5,863
Suzuga	6	14 25	7	7 13	7	14 19	7	15 35	American	Barber Line	375.3	52.0	24.10	New York	Manila.	Gen., kerosene	6,274	5,177	3,877
Sussex	6	18 15	7	8 27	7	15 21	7	16 30	British	Federal Steam Navigation Co.	420.0	54.0	25.0	New York	Australia	General	4,974	7,016	5,078
Munaires	6	15 37	7	9 25	7	16 24	7	17 25	American	Musson Steamship Co.	370.0	53.1	24.7	Galveston.	Balboa.	Sulphur	5,500	5,577	4,225
Dillwyn	6	10 17	7	10 13	7	17 15	7	18 39	American	Columbus Shipping Co. (S. B.)	435.0	55.0	23.0	Mobile	San Francisco.	Fuel oil	8,362	7,602	5,312
Hanlop	7	10 38	7	11 15	7	18 39	7	20 00	Norwegian	Brutusgaard Kisterud.	415.3	54.7	23.0	Port Arthur.	Hongkong.	Oil	8,318	7,286	5,445
H. F. Alexander	7	14 28	8	6 13	8	15 00	8	18 20	American	Pacific Steamship Co.	500.1	63.1	23.0	New York	San Francisco.	General	1,247	10,907	6,390
Acornilla	2	14 23	8	6 14	8	12 40	8	16 59	British	Pacific Steam Navigation Co.	215.7	33.5	14.8	Cristobal	Champerico.	General	589	1,273	706
Salader	8	12 08	8	7 35	8	12 41	8	18 28	British	Pacific Steam Navigation Co.	215.0	35.4	13.11	Cristobal	Guayaquil.	General	211	1,213	692
Nedumetia.	8	12 08	8	7 35	8	12 41	8	18 28	Danish	Norden Steamship Co.	315.1	46.5	17.0	New York	Valparaiso.	General, coal	2,400	3,322	2,485
Brimscham	8	17 45	9	7 05	9	15 48	9	19 00	American	Argonaut Steamship Co.	399.7	56.2	25.2	New York	Honolulu.	General	8,100	6,479	4,799
Isle de Menil.	8	14 45	9	7 05	9	15 48	9	19 00	Spanish	Naviga, Sotia & Aznar	385.0	50.0	12.0	Norfolk	Guaymas.	Ballast	4,456	3,437	
Roan Adair.	8	17 45	9	7 05	9	15 48	9	19 00	American	Seas Shipping Co.	424.8	55.2	28.0	New York	Seattle.	General, steel	9,418	7,470	5,529
Brimscham	8	15 53	9	9 30	9	15 43	9	18 03	American	United States Navy	420.0	47.0	21.3	Cristobal	Balboa.	General	4,293	5,904	4,321
Eastern Moon.	9	11 00	9	11 20	9	18 03	10	12 21	American	U. S. & A. Line (S. B.)	384.8	51.2	23.6	New York	Melbourne.	General	1,330	3,173	2,163
Remso	9	19 35	9	11 58	9	19 20	10	13 45	American	Pacific Mail Steamship Co.	326.0	38.2	17.3	Cristobal	Melbourne.	General	5,584		
Newport	9	11 30	10	6 24	10	14 02	10	14 56	American	Ellerman Hall Line.	400.0	52.0	27.6	New York					
Edgar F.	9	19 09	10	7 26	10	14 49	10	15 30	American	Luckenbach Line	425.0	57.3	26.0	Boston	San Francisco	General	6,000	8,568	6,696
Lucenbach.	9	23 09	10	10 42	10	17 45	10	18 55	British	Bank Line Ltd.	399.3	52.2	26.3	New York	Shanghai.	General	6,534		
Haloric	9	20 55	10	11 55	10	19 04	10	20 15	American	H. K. Goodwin.	267.0	46.0	24.1	Mobile.	San Francisco	Steel pipes.	3,035	2,597	1,714
Nika	9	20 55	10	11 55	10	19 04	10	20 15	American										

Transport.

Tug.

Motor ship.

Cruiser.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Walter A.	3 17 50	7 54	4 14 38	American.	Luckenbach Line.	446 5	56 1 28 0	Portland.	Newport.	General.	5,358	8,795	6,567
Luckenbach.	5 14 30	7 55	5 23 40	Dutch.	Holland-American Line.	470 0	58 0 28 0	Vancouver.	Rotterdam.	General.	8,280	9,315	6,068
Kindred.	5 13 00	8 11	5 15 27	American.	United States Steel Products Co.	424 2	56 2 19 0	Honolulu.	Baltimore.	Ballast.	6,450	6,640	5,099
Knoville City	5 10 50	8 11 39	5 19 30	British.	Nautilus Steamship Co.	336 2	56 2 23 9	Bunta Arenas.	Christobal.	General.	3,172	2,163	
Poplar Branch.	5 8 00	5 12 08	5 19 35	American.	Pacific Mail Steamship Co.	500 0	58 2 19 2	San Francisco.	Christobal.	General.	13,899	11,224	7,860
Newport.	5 21 20	7 40	6 16 00	American.	Standard Oil Co.	410 0	58 0 22 6	Los Angeles.	Boston.	Gasoline.	6,225	8,243	6,312
W. S. Rheem.	6 6 45	8 29	6 22 30	American.	Standard Transport Co.	400 0	58 0 22 6	Los Angeles.	Boston.	Gen., lumber.	5,382	7,611	5,450
Tiger.	7 3 00	7 20	7 14 35	American.	United States Steel Products Co.	420 0	47 0 19 0	Seattle.	New York.	General.	4,000	5,659	4,148
Chattanooga	7 10 20	8 18	8 15 55	American.	United States Navy.	380 4	53 1 21 6	San Jose, Guat.	Christobal.	Lumber.	2,418	8,345	4,998
Birmingham.	2 7 00	8 6 43	8 14 25	American.	Commercial Line.	465 3	56 2 23 0	Everett.	Liverpool.	General.	8,800	7,581	5,519
Hoboken.	8 2 30	9 37	8 16 20	British.	Pacific Steam Navigation Co.	429 0	55 2 28 0	Valparaiso.	Baltimore.	Gen., lumber.	3,296	2,156	
Ortega.	8 21 30	9 8 20	9 23 32	American.	Dollar Line.	336 8	41 2 22 0	Vancouver.	Christobal.	General.	7,602	5,312	
Orient.	9 4 00	9 8 49	9 15 50	Chilean.	Chilean Line.	435 0	56 0 26 6	Valparaiso.	Mobile.	Ballast.	8,158	7,611	5,454
Imperial.	7 17 13	9 11 39	9 15 48	American.	United States Shipping Board.	424 2	56 2 25 10	Balboa.	London.	General.	5,787	8,508	6,179
Dillwyn.	9 11 45	9 13 09	9 20 22	American.	United States Steel Products Co.	446 0	56 0 25 6	Vancouver.	New York.	General.	222	2,844	1,748
Steel Seafarer.	10 2 00	7 46	10 14 55	American.	Luckenbach Line.	303 0	43 0 14 10	Portland.	Christobal.	General.	7,556	8,012	5,807
Katrina Luckenbach.	9 1 30	8 00	10 14 55	American.	United States Navy.	435 0	55 9 20 0	Balboa.	New York.	General.			
Pattuxent.	10 5 10	8 27	10 15 22	British.	McAndrew & Co.	445 0	28 0 25 0	Guayaquil.	Tampico.	Ballast.			
Alvarado.	30 5 35	8 39	10 15 57	British.	C. T. Bowring.			Tocopilla.					
Lompoc.	10 6 00	9 44	10 17 33	Japanese.	Nippon Yusen Kaisha.			Kobe.	New York.	General.			
Mayebashi													
Maru.													

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

s Navy tug.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
June 3	Anna.	P. Johannaessen.	New York.	June 4	San Benito.	United Fruit Co.	Boston.
June 4	San Benito.	United Fruit Co.	Boston via Limon.	June 5	Anna.	P. Johannaessen.	Kingston.
June 5	Abangarez.	United Fruit Co.	New Orleans via Habana.	June 6	Van Rensselaer.	Royal Netherlands W. I. Mail.	Port Limon.
June 6	Parishina.	United Fruit Co.	New Orleans.	June 7	Pastores.	United Fruit Co.	New York via wayports.
June 7	Van Rensselaer.	Royal Netherlands W. I. Mail.	Amsterdam via wayports.	June 7	Abangarez.	United Fruit Co.	New Orleans via Bocas del Toro.
June 8	Pastores.	United Fruit Co.	New York via Habana.	June 7	San Blas.	United Fruit Co.	Boston via Limon.
June 9	Puerto Rico.	Societe Commercial de Oriental.	St. Nazaire and wayports.	June 8	Puerto Rico.	French Line.	New Orleans via wayports.
June 10	Conde de Churrua.	Boston via Habana.		June 9	Conde de Churrua.	Societe Commercial de Oriental.	St. Nazaire and wayports.
June 11	Christobal.	United Fruit Co.	Norfolk.	June 9	Panama.	Panama Railroad Steamship Line.	Tampico.
June 12	Yan Rensselaer.	Royal Netherlands W. I. Mail.	Port Limon.	June 10	Camito.	Elders & Fyfes, Ltd.	New York via Haiti.
June 13	Montserrat.	Spanish Line.	Barcelona via wayports.	June 10	Camito.	Royal Netherlands W. I. Mail.	Kingston.
June 14	Camito.	Elders & Fyfes, Ltd.	Port Limon.	June 10	Camito.	Royal Netherlands W. I. Mail.	Amsterdam via wayports.

* Other than vessels passing through the Canal.

Commercial Traffic Through the Panama Canal in May, 1922, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>United States to Far East:</i>							<i>Long tons.</i>
United States.....	12	51,743	66,681	82,205	50,990	\$64,678.75	108,793
British.....	10	44,749	54,462	63,438	40,260	55,764.10	77,416
Japanese.....	5	21,085	24,488	31,569	20,739	26,190.00	38,139
Norwegian.....	4	16,349	18,550	23,892	14,928	20,238.65	31,881
Dutch.....	1	4,366	5,254	6,915	4,393	5,457.50	8,671
Totals.....	32	138,292	169,435	208,019	131,310	172,329.00	264,900
<i>United States coastwise:</i>							
United States.....	32	123,011	152,260	189,423	121,945	153,626.80	173,128
<i>East coast of United States to west coast of South America:</i>							
United States.....	7	28,400	34,866	45,653	28,388	28,174.92	16,587
British.....	4	15,285	17,969	24,004	14,782	17,011.22	10,208
Swedish.....	1	1,340	1,399	2,257	1,583	1,675.00	1,495
Norwegian.....	1	881	1,479	1,493	873	1,101.25	256
Totals.....	13	45,906	55,713	73,407	45,626	47,962.39	28,546
<i>From Europe to west coast of South America:</i>							
British.....	4	14,209	17,543	22,137	14,251	17,873.75	23,807
Italian.....	2	6,057	8,039	10,536	5,122	7,571.25	1,815
German.....	2	5,214	8,021	8,798	5,150	6,517.50	6,246
Dutch.....	2	4,236	6,927	6,832	4,218	5,295.00	4,884
French.....	1	3,566	4,081	5,681	3,600	4,457.50	795
Totals.....	11	33,372	44,611	53,984	33,341	41,715.00	37,547
<i>From Cristobal, C. Z., to west coast of South America:</i>							
British.....	4	1,325	1,720	2,391	1,465	1,656.25	900
Chilean.....	3	4,883	8,406	10,341	6,193	6,103.75	1,189
Peruvian.....	3	3,708	7,750	12,325	6,031	4,635.00	1,043
Totals.....	10	9,916	17,876	25,057	13,689	12,395.00	3,132
<i>From Mexico to west coast of South America:</i>							
British.....	5	20,927	23,979	34,707	20,758	26,158.75	44,109
<i>From Europe to west coast of United States:</i>							
United States.....	1	4,426	5,938	7,252	4,425	5,532.50	10,475
Danish.....	1	4,207	5,286	5,296	3,325	5,258.75	4,851
British.....	1	3,713	4,180	5,563	3,549	3,009.60	.....
Norwegian.....	1	3,046	3,886	4,894	3,054	3,807.50	3,400
Swedish.....	1	2,253	4,019	3,745	2,858	2,816.25	796
Totals.....	5	17,645	23,309	26,750	17,211	20,424.60	19,522
<i>From Europe to west coast of Canada:</i>							
British.....	2	9,133	12,427	14,445	9,202	11,416.25	6,718
Dutch.....	1	4,474	6,911	7,310	4,495	5,592.50	3,670
French.....	1	4,119	4,776	6,419	4,023	5,148.75	5,181
Totals.....	4	17,726	24,114	28,174	17,720	22,157.50	15,569
<i>From Europe to Australasia:</i>							
British.....	3	18,302	23,804	29,064	18,560	22,877.50	14,935
<i>From east coast of United States to Australasia:</i>							
British.....	2	7,261	11,162	11,404	7,308	9,076.25	13,900
United States.....	1	4,531	4,824	6,188	4,629	5,663.75	4,810
Totals.....	3	11,792	15,986	17,592	11,937	14,740.00	18,710
<i>From east coast of United States to west coast of Canada:</i>							
United States.....	2	7,240	9,657	10,948	7,364	9,050.00	15,300
<i>From Cristobal, C. Z., to west coast of United States:</i>							
United States.....	2	3,194	3,799	5,322	3,171	3,992.50	3,802
<i>From Europe to west coast of Central America:</i>							
German.....	1	1,124	1,320	1,028	1,136	1,405.00	999
French.....	1	851	854	1,091	747	638.25	.....
Totals.....	2	1,975	2,174	3,019	1,883	2,043.25	999
<i>From east coast of Canada to Australasia:</i>							
British.....	1	4,811	5,518	7,750	4,873	6,013.75	9,507

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of South America to Far East:</i>							<i>Long tons.</i>
Japanese.....	1	3,666	4,282	5,848	3,633	\$4,582.50	4,876
<i>From West Indies to Far East:</i>							
Japanese.....	1	3,582	4,459	5,227	3,193	4,477.50	5,000
<i>From east coast of South America to west coast of United States:</i>							
United States.....	1	3,522	4,914	5,652	3,522	4,402.50	6,331
<i>From east coast of Canada to Australasia:</i>							
British.....	1	3,502	4,102	5,492	3,342	4,377.50	1,572
<i>From east coast of Mexico to west coast of Central America:</i>							
United States.....	1	2,350	2,326	3,099	2,364	2,791.20	4,687
<i>From east coast of United States to west coast of Mexico:</i>							
Mexican.....	1	721	919	1,415	859	661.68	.....
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	810
<i>From Cristobal, C. Z., to west coast of Central America:</i>							
British.....	1	638	706	1,170	654	797.50	416
<i>From Cristobal to Gatun Lake:</i>							
British.....	1	148	148	148	148	111.00	.....
Totals, May, 1922.....	134	472,852	594,713	742,419	467,705	578,433.82	673,398
Totals, April, 1922.....	121	409,406	520,688	650,055	410,266	505,319.46	562,433
Totals, May, 1921.....	100	334,894	414,429	529,408	334,322	412,934.09	381,323

PACIFIC TO ATLANTIC.

<i>United States coastwise ports:</i>							
United States.....	23	89,874	108,686	135,768	90,064	\$111,151.00	108,319
<i>From west coast of South America to east coast of United States:</i>							
United States.....	9	33,330	41,066	53,515	33,151	41,662.50	59,773
British.....	4	10,641	13,608	18,452	11,105	12,216.62	7,539
Norwegian.....	3	2,624	3,496	4,304	2,639	3,280.00	1,884
Danish.....	2	4,777	5,197	6,229	3,939	5,905.75	9,497
Swedish.....	1	1,349	1,458	2,316	1,630	1,686.25	2,700
Totals.....	19	52,721	64,825	84,816	52,464	64,751.12	81,393
<i>From west coast of United States to Europe:</i>							
United States.....	3	15,873	17,820	23,045	14,153	19,541.30	29,300
Japanese.....	3	13,348	13,464	17,590	12,851	16,156.80	22,355
Danish.....	2	7,213	9,921	12,609	8,807	9,016.25	16,866
Norwegian.....	1	4,523	5,627	7,093	4,479	5,653.75	9,600
British.....	1	3,736	4,459	6,138	3,838	4,670.00	8,525
Swedish.....	1	2,303	3,969	3,802	2,839	2,878.75	5,849
Totals.....	11	46,996	55,260	70,277	46,967	57,916.85	92,495
<i>From west coast of South America to Europe:</i>							
British.....	5	20,471	25,298	31,535	19,955	25,588.75	35,270
German.....	2	6,118	7,906	8,795	5,156	7,647.50	11,420
Dutch.....	1	1,605	3,123	2,672	1,629	2,006.25	2,856
Totals.....	8	28,194	36,327	43,002	26,740	35,242.50	49,546
<i>From west coast of South America to Cristobal, C. Z.:</i>							
British.....	4	1,325	1,720	2,385	1,398	1,656.25	1,042
Chilean.....	2	3,608	6,250	8,333	6,083	4,510.00	984
Peruvian.....	2	2,504	5,364	7,922	3,941	3,130.00	3,192
Totals.....	8	7,437	13,334	18,640	11,425	9,296.25	5,218
<i>From west coast of Canada to Europe:</i>							
British.....	4	21,684	25,891	31,690	20,084	26,956.40	36,968
French.....	1	4,368	4,369	5,248	3,329	5,242.80	5,401
United States.....	1	3,465	5,454	5,719	3,472	4,331.25	8,360
Norwegian.....	1	1,317	1,327	1,425	1,317	1,616.40	1,720
Totals.....	7	30,834	37,041	44,082	28,202	38,146.85	52,449
<i>From Australasia to Europe:</i>							
British.....	5	26,308	32,230	42,352	26,657	32,885.00	21,469

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From Far East to east coast of United States:</i>							<i>Long tons.</i>
United States.....	4	15,033	19,892	22,981	14,906	\$18,791.25	32,492
Japanese.....	1	3,649	4,496	5,821	3,588	4,561.25	3,463
Totals.....	5	18,682	24,388	28,802	18,494	23,352.50	35,955
<i>From west coast of Canada to east coast of United States:</i>							
United States.....	4	15,501	19,639	24,856	15,263	19,376.25	21,322
<i>From west coast of South America to east coast of Mexico:</i>							
British.....	3	11,237	12,989	19,007	11,410	9,352.08	.....
<i>From west coast of Central America to Europe:</i>							
German.....	2	2,901	4,285	5,054	2,939	3,626.25	5,469
<i>From west coast of Central America to Cristobal, C. Z.:</i>							
British.....	2	1,507	1,710	2,576	1,540	1,883.75	2,009
<i>From west coast of Central America to east coast of Mexico:</i>							
United States.....	2	2,371	2,389	3,387	2,386	1,788.75	.....
<i>From Australasia to east coast of United States:</i>							
United States.....	1	4,309	4,944	6,848	4,280	5,386.25	1,065
<i>From west coast of South America to West Indies:</i>							
French.....	1	4,089	4,936	5,617	3,491	5,111.25	168
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,634	4,873	5,867	3,634	4,542.50	2,501
<i>From Australasia to east coast of Canada:</i>							
British.....	1	3,513	4,160	5,454	3,340	4,391.25	1,600
<i>Mexican coastwise ports:</i>							
French.....	1	2,155	2,096	2,953	1,880	1,616.25	.....
<i>From west coast of Central America to east coast of United States:</i>							
Norwegian.....	1	1,608	1,762	2,471	1,484	2,010.00	2,544
<i>From west coast of United States to Cristobal, C. Z.:</i>							
United States.....	1	1,332	1,593	2,153	1,309	1,665.00	1,494
<i>Colombian coastwise ports:</i>							
British.....	1	614	622	1,138	602	746.40	93
<i>Miscellaneous:</i>							
British ¹	1	(²)	(²)	(²)	(²)	2,375.00	.....
Panaman ³	1	14	14	14	14	10.50	.....
Totals, May, 1922.....	109	355,831	438,103	555,134	354,585	436,623.55	485,109
Totals, April, 1922.....	109	362,526	454,145	569,283	362,562	447,936.65	483,614
Totals, May, 1921.....	110	360,002	450,188	563,194	358,425	422,948.68	411,412

¹ Warship.² Displacement tonnage of 4,750.³ Launch.**Arrival of Naval Academy Practice Squadron.**

The Practice Squadron of the United States Naval Academy, carrying midshipmen from the Academy on a practice cruise, arrived at Cristobal in the morning of June 13. The squadron consists of the battleships *Florida* (flagship), *Delaware*, and *North Dakota* and the cruiser *Olympia*. The *Florida* and the *Olympia* made the transit through Gatun Locks to Gatun Lake directly after arrival, to anchor in fresh water, and the other vessels went to the coaling plant at Cristobal for bunkers. The squadron is to be at the Canal until June 20.

Postal and Cable Addresses of The Panama Canal.

The postal address is "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 5, 1922.

The Master of the steamship *Heffron* radios as below:

"At 5.45 p. m., G. M. T., June 3d, passed derelict schooner, floating side up, with spar projecting 20 feet above water, Lat. 12° 52' N., Long. 99° 29' W. Very dangerous to navigation."

JAY J. MORROW,
Governor.

Notice to Mariners.—Light Established, Flamenco Island, Balboa Harbor.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 8, 1922.

CIRCULAR No. 643-99.

1. On or about July 1, 1922, a white, flashing light will be established on S. W. side of Flamenco Island. Position, latitude 8° 50' 40" North, longitude 79° 31' 44" West. Illuminant, electricity. Candlepower approximately 20,000.

Focal plane 120 feet, visible 19 miles, exhibited from square concrete pedestal, painted white. Color of light, white, with red sector. Characteristic, 0.5 second light, 1 second dark; 2 seconds light, 1.5 seconds dark (one group of two flashes every 5 seconds). Showing white from 92° to 185° true. Red sector from 185° to 283°. Obscured 169° from 283° to 92° through North.

2. Owing to its location this light will be of no use as a daymark.

(C. & G. Charts Nos. 952 and 953. H. O. Charts Nos. 1019, 1176, and 5001. H. O. Publication No. 30.)

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 10, 1922.

The Master of the steamship *Venezuela* radios that he passed a floating tree, 40 feet long, at 9 a. m. to-day, in Lat. 9° 10' N., Long., 84° 51' W. Dangerous to navigation.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended June 7:

Steamships *Lady Sybil*, dry dock ship for cleaning and painting; clean and wire-brush; paint 1 coat of anticorrosive and 1 coat of antifouling paint, paint furnished by agents of ship; open up and examine H. P., I. P., and L. P., cylinders and valve chests; renew rings as required; machine valves; recut oil ways and re-align thrust horseshoes; repack stern gland and gauge end of tail shaft; refit valves of general service pump and repair 2 valves in the pipe line; open up, examine, and clear air and circulating pumps; renew wooden blocks in anchor windlass brakes; clean choked stay tubes and electric weld boiler; renew boiler zincs, grind-in all boiler valves; open up, clean, reface and grind-in all sea valves; renew sternpost, 2 boards, and 12 rowlocks with sockets of port lifeboat; fit steam connections into fore and after holds; renew cover for steering chains on port side; reface and grind-in 4 steam stop valves in engine room; renew 1 length of wash deck pipe; clean out boiler feed tank in engine room; supply 1 vacuum gauge in place of old; *Artigas*, cast and machine 6 valve guards for main air pump; *Hwah Ping*, manufacture 20 miscellaneous bronze air port screws; repair lavatories; *H. M. Storey*, manufacture and install 1 combination shaft and pinion for telemotor gear; launch *Leland F.*, lift launch to dock for painting, paint bottom 2 coats of copper paint; install 8" towing bitt, aft; manufacture and install 1 canopy frame and canopy; steamship *Lompoc*, dry dock ship for installation of spare tail shaft, account of broken shaft; re-align stern tube and renew lignum-vitæ bushing; stage, clean, and wire-brush; paint 1 coat of anticorrosive and 1 coat of antifouling paint, paint furnished by agents of ship; overhaul main engine stop valve; bore out general service pump; renew deck, steam, and exhaust

lines; repair feed line; repair boiler mountings; weld furnace in port boiler; repair oil line; repair evaporator; repair water service pipe; true up feed pump valves; renew links in spare steering chain; repair ventilators; calk leaky rivets in hull; cable ship *Guardian*, manufacture 1 set of H. P. piston rings for port and starboard main engines; remetal thrust horseshoe bearings and fit with adjustable liners; manufacture and fit new rings for fan engine, circulating pump, dynamo engine, and water piston rings to donkey boiler feed pump; manufacture and install 2 new valve spindles for steering engine; repair lugs to door of blower engine casing; repair general service pump; renew water rings in feed pump; repair ash ejector; overhaul boiler mountings; alter engine-room ventilators; make general repairs to steam, exhaust, water lines and feed lines; make miscellaneous heavy repairs to cable repair equipment; make miscellaneous repairs to steering gear, davits, cranes, and rigging; repair scupper and vent pipe.

The following vessels were at the Cristobal shops for repairs during the week ended June 12:

Steamships *Port Chalmers*, make 1 new copper pipe, and test to 400 pounds; *Conde de Churruca*, repair pipe as directed; schooner *Beulah*, make 1 mainmast, jib, 1 tarpaulin for hatch; repair stem; launch *Happy Days*, copper hull; make 3 extra balls for engine head; steamships *Brenta*, make 1 water tank as sample and repair damaged tanks, etc., *Cristobal*, furnish calkers; furnish 12 packing glands as per sketch; furnish 1 piece of tool steel; repair galley range grate; *Advance*, overhaul water end of sanitary pump; manufacture knuckle joint and repair reach rod main stop valve; repair hand rail and straighten stanchion, port side, No. 2 hatch; manufacture 6 brass caps for lifeboat self-bailers; *Montserrat*, repair piping as found necessary; *Turrialba*, straighten 1 connecting rod for steering engine; *Delft*, repair ice machine as directed; *Toco*, make 1 steel adapter for American C. O.-2 gas bottles; U. S. Army, Jr., mine planter *Nones*, extend lower fender to stem of vessel on port and starboard sides.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending June 10, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Jamaica.....	Pacific Steam Navigation Co.....	June 4.....	June 4.....		21
U. S. A. T. Eldena.....	U. S. Army Transport Service.....	June 4.....	June 4.....	192	
Newport.....	Pacific Mail Steamship Co.....	June 5.....	June 5.....	5	6
Dillwyn.....	U. S. Shipping Board.....	June 7.....	June 9.....	5,857	
Salvador.....	Pacific Steam Navigation Co.....	June 8.....	June 8.....		7
Meriden.....	General Steamship Corporation.....	June 9.....	June 10.....	100	
U. S. S. Argonne.....	U. S. Navy Transport Service.....	June 10.....		8	

Deceased Employee.

The estate of the following deceased employee of The Panama Canal is now in process of settlement, and any claims against this estate, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due him, should be presented at the office of the Administrator of Estates at once in order that the estate may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. This name will be published but once.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Edgar Best.....	34324	Barbados.....	Paraiso.....	Dredging Division....	May 17, 1922.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address

The Panama Canal Record, Balboa Heights, Canal Zone,

The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office at Cristobal, C. Z., under the Act of March 3, 1879.

Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., June 21, 1922.

No. 45.

Coal Prices.

Inquiries received indicate that not all of the users of the Canal have ample information as to the prices of coal at the Canal.

The prices, under various conditions of delivery, are published from time to time in THE PANAMA CANAL RECORD and form a part of the Tariff, with supplements, all of which are distributed to steamship operators regularly and without charge. Files of these publications may be consulted in the offices of American Consular officers, who are in position to supply all other essential information about the Panama Canal.

The Panama Canal, acting through its affiliate, the Panama Railroad Company, is the only organization selling coal to ships at the Canal. Its quotations, accordingly, are the lowest prices and the only prices unless it should happen that contractors are quoting for sales at the Canal, notwithstanding that all deliveries are made through the Canal plants at the published tariff rates.

The following is a summary of the present prices on coal:

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton, but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

- (a) To vessels taking 1,200 tons or over;
- (b) To vessels taking between 825 and 1,200 tons and bunkering full;
- (c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

In case of change of prices, the new rates are published in the Tariff and in THE PANAMA CANAL RECORD, and as far as possible advance notice is given to the steamship agents on the Isthmus and to the press.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, June 17, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.		Gross.	Net.
Melba	10	14	45	11	6	12	11	15	25	British	Anglo-Saxon Petroleum Co.	412.0	53.3	25.0	Port Arthur	Shanghai	Kerosene	7,626	6,112	4,389
Russels-shorn.	11	07	11	7	47	11	15	02	11	Norwegian.	Britannia Steamship Co.	420.0	53.9	24.0	Philadelphia	Yokohama	General	6,029	6,592	4,733
Mineola	10	19	08	11	10	38	11	23	56	American	Grace Line	298.6	40.0	22.10	New York	Lobitos	General	2,951	2,835	1,805
Keemin	11	17	58	12	6	15	12	13	00	British	Alfred Holt & Co.	482.0	58.0	25.6	Norfolk	Yokohama	General	6,730	9,032	6,189
John Eua	11	16	35	12	6	53	12	13	17	American	James M. Batts.	312.9	48.0	23.0	Mobile	Los Angeles	Iron pipe	4,600	2,860	2,592
Pennsylvania	12	12	50	12	8	53	12	15	62	American	American-Hawaiian Line	407.7	53.7	28.1	Boston	Los Angeles	General	4,973	7,107	4,916
Carnarthen-shire	10	13	15	12	12	54	12	20	09	British	Royal Mail Steam Packet Co.	470.0	58.0	25.3	Southampton	Vancouver	General	5,669	9,679	7,061
Willaro	12	8	25	12	12	55	12	21	07	American	Williams Steamship Co.	386.8	52.2	23.0	New York	Los Angeles	General, steel	6,000	5,680	4,162
Florida	13	8	30	13	8	30	13	11	11	American	U. S. Navy	521.0	88.0	30.0	Hampton R'ds	Gatun Lake				
Olympia	13	8	40	13	8	43	13	11	18	American	U. S. Navy	340.0	53.0	25.0	Hampton R'ds	Gatun Lake				
Alonso	12	12	20	13	11	21	13	17	50	British	MacAndrew & Co.	303.0	43.0	14.3	New York	Guayaquil	General	586	2,878	1,714
Largo	13	7	55	16	12	10	13	18	58	British	Thomas Gray & Co.	379.0	50.0	21.0	Panama	Tatum	Coal	2,500	5,323	3,839
El Grillo	13	7	35	13	13	03	13	20	00	British	Lobitos Offshoots, Ltd.	440.0	57.0	21.3	Liverpool	San Francisco	Ballast	7,468	5,042	
Kent	13	6	55	14	6	02	14	13	35	British	Pacific Steam Navigation Co.	412.0	52.0	20.0	Cristobal	Guayaquil	General, coal	1,969	6,440	4,900
Laura C. Hall	12	22	30	14	6	05	14	13	35	British	Pacific Metals Transp. Co., Ltd.	81.0	25.6	9.0	Cristobal	Buenaventura	General	4	132	72
Delaware	13	8	27	14	6	05	14	10	18	American	U. S. Navy	518.0	85.0	30.8	Hampton R'ds	Gatun Lake				
North Dakota	13	8	42	14	6	10	14	10	18	Chilean	U. S. Navy	518.0	85.0	30.8	Hampton R'ds	Gatun Lake				
Imperial	9	15	50	14	8	58	14	16	31	Chilean	Chilean Line	336.8	41.2	24.0	Cristobal	Valparaiso	General	1,016	3,296	2,156
Texas	13	5	40	14	9	27	14	17	15	French	French Line	409.2	52.6	19.3	Antwerp	Vancouver	General	1,902	7,081	4,959
Harry Luckenbach	14	3	22	14	10	38	14	18	10	American	Luckenbach Line	448.9	60.2	25.0	New York	Los Angeles	General	4,800	9,262	6,853
Toco	14	6	15	14	11	14	19	08	14	British	Sheridan Steamship Co.	440.8	56.0	25.0	Tampico	Tocopilla	Oil	9,636	7,693	4,822
Radames	14	1	42	14	11	40	14	19	50	German	Kosmos Line	380.8	47.0	24.2	Hamburg	Guayaquil	General	4,707	4,971	3,486
Agridale	14	10	22	14	12	02	14	20	30	American	Mallory Steamship Co.	387.0	53.0	24.0	Galveston	Seattle	General	6,178	5,527	4,138
Canadian	14	6	50	14	13	03	14	21	22	British	Canadian Government	399.2	52.0	25.2	Cuba	Vancouver	Sugar	7,338	5,894	4,143
Traveller	13									American	J. H. Stilson				Cristobal	Gatun Lake				
America	13									American	J. H. Stilson				Cristobal	Gatun Lake				
Barge No. 2279	14	13	43	15	6	22	15	12	59	American	J. H. Stilson	436.9	58.2	23.6	Hampton R'ds	Gatun Lake	Navy stores	495	8,407	5,212
Chaumont	14	20	30	15	7	22	15	14	12	American	N. Atl. and West. S. S. Co. (S. B.)	390.0	54.2	18.0	Boston	Seattle	General	1,964	6,134	4,292
Lehigh	11	14	55	15	9	00	15	15	28	American	Panama Railroad Steamship Line	295.0	38.0	17.8	Cristobal	Buenaventura	General	80	2,947	2,113
Advance	13	20	05	15	9	05	15	16	08	Dutch	Royal Netherlands W. I. Mail	361.0	49.0	18.0	Hampton	Valparaiso	General	3,000	4,759	3,660
Haarlem	13	20	05	15	9	05	15	16	08	Danish	East Asiatic Steamship Co.	398.2	53.6	20.0	Copenhagen	Valparaiso	General, cement	5,334	7,027	5,338
Australien	14	16	15	15	9	13	15	16	56	American	American-Hawaiian Line	415.0	53.6	19.0	Boston	Portland	General	2,827	7,273	5,105
Florida	15	9	00	15	10	50	15	17	42	American	Atl. Gulf and Pacific Co. (S. B.)	409.6	54.1	27.1	Baltimore	Seattle	General	5,103	6,665	5,020
West Haven	15	9	00	15	11	07	15	18	44	American	Atl. Gulf and Pacific Co. (S. B.)	409.6	54.1	27.1	Baltimore	Seattle	General	5,103	6,665	5,020

• Bark.

• Dreadnaught.

• Cruiser.

• Motor schooner.

• Battleship.

• Launch.

• S. Navy transport.

* Bark.

* Dreadnaught.

* Cruiser.

* Motor schooner.

* Battleship.

* Launch.

* U. S. Navy transport.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.—continued.

Cottonplant.	14	17	22	15	12	15	15	19	38	15	20	56	American	Pacific States Lumber Co.,	253	4	43	7	22	2	Mobile	San Francisco	2,908	2,808	1,761
Mogellan.	14	16	07	15	12	57	15	20	24	15	21	23	British	Pacific Steam Navigation Co.,	461	6	59	3	22	9	Hull	Valparaiso	4,699	8,786	6,074
Elber Branch.	15	13	58	16	13	20	16	13	20	16	14	10	British	Nantilus Steamship Co.,	380	3	49	7	21	3	Port Talbot	Coronel	3,974	4,951	3,592
Santa Maria.	15	21	04	16	7	25	16	14	25	16	15	50	British	S. Santa Maria Steamship Co.,	460	0	60	3	28	0	Tacopilla	Tacopilla	10,752	8,746	5,679
Nistlon.	16	6	25	16	8	25	16	16	14	16	17	40	British	W. S. Miller	335	0	48	0	19	0	San Antonio	San Antonio	5,293	7,684	3,084
Nordfarer.	16	7	05	16	9	02	16	18	00	16	17	40	Danish	Patterson Bros.	364	0	47	0	24	0	Callito	Callito	5,293	7,289	3,108
Trentonite.	16	10	35	16	10	45	16	17	16	16	16	16	American	Standard Oil Co.	419	0	57	0	20	0	Molendo	Talara	7,345	5,395	3,063
Genoa Maru.	16	11	25	16	11	40	16	18	50	16	20	38	Japanese	Nippon Yusen Kaisha	425	0	54	0	28	0	New York	Kobe	8,026	8,897	5,063
West Cambo.	16	12	52	16	12	25	16	19	35	16	21	15	American	Swayze & Hoyt (S. B.)	409	0	54	0	20	3	Para	Los Angeles	3,300	6,645	5,064
City of Bagdad.	16	6	45	16	13	10	16	20	32	17	6	36	British	Ellerman City Line.	470	0	38	0	27	4	New York	Yokohama	8,500	8,497	5,984
Gen. O. H.	14	18	04	17	6	22	17	12	40	17	14	00	American	Panama Railroad Steamship Line	356	4	45	3	17	6	New York	Guayaquil	508	4,503	2,764
Ernst.	2	6	30	17	7	30	17	15	09	17	16	35	Italian	Navigazione Libera Trieste.	400	6	54	1	25	6	New Orleans	Hongkong	7,154	5,508	4,049
Canadian	17	4	54	17	9	10	17	15	45	17	17	21	British	Canadian Government	400	0	52	0	19	6	Montreal	Sydney	2,500	5,842	4,092
Plantier.	17	5	55	17	9	22	17	16	51	17	18	30	British	E. Hain & Sons Ltd.	472	0	59	0	27	4	Sabine	Port Pirie	8,865	8,710	6,218
Treathoney.	17	11	25	17	13	00	17	19	10	17	20	18	British	Commonwealth and Dom. Line.	426	0	54	0	23	0	New York	Auckland	3,400	7,544	5,255
Port Lincoln.	17	11	25	17	13	00	17	19	10	17	20	18	British	Commonwealth and Dom. Line.	426	0	54	0	23	0	New York	Auckland	3,400	7,544	5,255

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Fiona.	11	2	00	11	7	49	11	14	00	11	17	00	Danish	East Asiatic Co.	408	0	53	0	25	0	San Francisco	Copenhagen	5,715	5,744	4,016
Advance.	11	2	50	11	8	31	11	14	55	15	19	00	American	Panama Railroad Steamship Line	295	0	38	5	19	0	Buenaventura	Cristobal	540	2,947	2,113
Argonne.	10	6	44	11	10	07	11	16	31	11	16	31	American	U. S. Navy	436	9	58	2	22	0	San Francisco	Hampton R'ds	250	8,407	5,212
Santa Luisa.	12	4	30	12	8	13	12	14	30	12	21	25	American	Grace Line	360	2	51	5	25	6	Talcahuano	New York	3,700	5,694	3,975
Hualaga.	12	6	00	12	8	34	12	16	38	12	21	25	Peruvian	Peruvian Line.	360	0	44	7	20	0	Mollendo	Cristobal	4,514	2,386	3,866
Venezuela.	11	17	00	12	12	35	12	17	40	13	20	37	American	Pacific Mail Steamship Co.	380	0	48	5	21	6	San Francisco	New York	1,375	6,033	4,353
Delft.	12	6	30	12	14	46	12	22	30	15	10	10	Dutch	Royal Netherlands W. I. Mail.	370	0	50	0	19	0	Valparaiso	Hamburg	4,517	5,862	4,393
Louisa C. Hall.	11	13	20	12	14	51	12	22	30	14	6	05	British	Pacific Metals Transp. Co., Ltd.	81	0	25	6	9	6	Buenaventura	Cristobal	72	132	72
West Ostanee.	12	16	00	13	6	42	13	16	10	13	19	09	American	Elder Steel Steamship Co.	410	0	54	3	23	0	Puget Sound	Charleston	7,000	6,567	4,917
Albertolive.	13	2	00	13	7	41	13	16	24	13	16	24	British	Imperial Oil Co.	463	0	60	2	26	6	Talara	New York	10,596	8,490	6,096
Johanne Dyb-	13	18	30	14	6	45	14	16	03	14	16	03	Norwegian	Olaf Orvig.	314	0	46	5	25	6	Corinto	Charleston	2,129	3,051	2,113
wood.	13	18	30	14	6	45	14	16	03	14	16	03	Norwegian	Standard Oil Co. of California.	439	0	58	0	30	3	San Francisco	Paulsboro.	11,300	8,912	6,254
D. G. Snield.	14	7	10	14	8	07	14	17	14	14	22	45	American	French Line	398	0	50	0	25	0	Corinto	Bilbao	5,051	5,857	4,166
Saint Louis.	14	7	10	14	8	07	14	17	14	14	22	45	American	American-Hawaiian Line	470	1	57	0	22	0	Los Angeles	Boston	5,709	9,250	6,816
Alaskan.	14	12	10	14	12	58	14	20	40	15	8	05	American	Pacific Steam Navigation Co.	220	0	34	0	10	4	Tunabo	Pto. Colombia	12	1,187	922
Janata.	14	12	00	14	13	43	14	21	34	15	8	55	British	Royal Netherlands W. I. Mail.	340	0	43	0	18	0	Valparaiso	Amsterdam	2,808	4,182	3,059
Hermes.	14	9	05	14	14	03	14	21	34	15	8	55	Dutch	T. S. Shipping Board.	410	5	48	3	18	6	Tacoma	Buenos Aires	2,103	6,573	4,901
West Katon.	14	14	00	14	14	44	14	23	04	15	6	12	American	T. S. Shipping Board.	410	5	48	3	18	6	Tacoma	Buenos Aires	2,103	6,573	4,901
Astronomer.	14	16	00	15	7	31	15	16	25	15	17	20	British	W. J. Harrison.	482	7	58	0	28	0	Victoria	London	10,600	8,898	6,334
Willow.	15	6	15	15	8	31	15	16	25	15	17	20	British	Williams Steamship Co.	386	8	52	2	16	6	Everett	New York	4,303	5,680	4,112
Targis.	15	6	30	15	8	49	15	16	55	15	20	45	German	Roland Line.	284	0	42	0	19	0	Champerico	Hayre	2,050	2,174	1,320
Garfield.	15	12	00	15	12	50	15	19	13	15	12	26	American	Grace Line.	300	0	45	0	14	6	Casna	New York	635	3,228	2,010
Andrea P.	15	11	56	15	13	23	15	20	40	15	20	40	American	Luckenbach Line.	496	0	88	0	22	0	Los Angeles	New York	11,487	8,732	7,732
Lukenbach.	15	7	10	15	14	57	15	22	07	16	10	29	Danish	East Asiatic Co.	216	0	55	0	20	0	Talcahuano	Liverpool	4,570	7,027	5,342
Panama.	16	9	15	16	10	31	16	17	26	16	23	51	British	Pacific Steam Navigation Co.	410	0	35	1	13	3	Guayaquil	Cristobal	1,357	884	884
Manavi.	16	21	30	17	7	42	17	15	00	17	23	55	American	U. S. Steel Products Co.	395	5	55	0	24	6	Vancouver	Boston	5,922	7,285	5,256
Steel Age.	16	21	30	17	7	42	17	15	00	17	23	55	American	Barber Steamship Lines, Inc.	380	0	61	0	23	0	Aberdeen	New York	5,000	5,158	3,813
Doehra.	17	2	00	17	7	58	17	16	10	17	20	45	American	Children Line.	345	0	49	0	22	0	Antofagasta	Baltimore	4,509	4,393	3,005
Republic.	17	9	00	17	10	12	17	18	03	17	19	40	American	Children Line.	345	0	49	0	22	0	Antofagasta	Baltimore	4,509	4,393	3,005

* Peas, copper, borax, barley, etc. ** Coffee and platinum.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

(Continued on page 566, column 2.)

Origin and Destination of Cargo—Pacific to Atlantic, May, 1922.

From—	NORTH AMERICA.										EUROPE.										Grand totals.	Per cent of total cargo.
	UNITED STATES.																					
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.	East coast of Canada.	West Indies.	East coast of Mexico.	Cristobal, C. Z. ²	Total, North America.	Belgium.	British Isles.	Denmark.	France.	Germany.	Holland.	Norway and Sweden.	Europe. ¹	Total, Europe.	East coast of South America.			
SOUTH AMERICA:																						
Chile	39,546	15,503	2,700	57,749				103	57,852	1,996	2,449		300	4,752	4,001		3,530	17,028	74,880	15.5		
Peru	9,288			9,288				2,951	12,239		5,416			10,783			2,523	18,722	30,961	6.4		
Colombia	533			533				353	886										17	903	0.2	
Venezuela	1,559			1,559				1,355	2,914					36			2,157	2,193	5,107	1.0		
West coast of South America ³	10,600			10,600		168		2,225	12,993		8,252			495			2,851	11,598	24,591	5.0		
Totals	61,526	15,503	2,700	79,729		168		6,987	86,884	1,996	16,117		300	16,066	4,001		11,061	49,541	171,364	28.1		
NORTH AMERICA:																						
West coast of United States	100,416	1,457	5,835	107,708		2,214	800	341	111,063		83,396	281	306	2,568	2,047	7,338	26,568	122,504	400,233	967	48.2	
West coast of Canada	2,968			2,968		611			3,579		12,498			6,310		2,121	524	12,498	16,077	3.3		
West coast of Central America	2,583			2,583				6,052	8,635		3,386							8,053	17,590	3.6		
West coast of North America ³	14,336			14,336		185			14,521				532			1,440	1,065	6,423	20,944	4.3		
Totals	120,303	1,457	5,835	127,595		3,010	800	6,393	137,798		99,280	281	838	8,878	2,047	10,899	28,157	150,380	400,288	578	59.4	
ASIA:																						
China	1,053			1,053					1,053											1,053	0.2	
Japan	222			222																222	0.0	
Philippines	21,822	665		22,487					22,487											22,487	4.6	
Malay Peninsula	823			823					823											823	0.2	
Far East ²	11,370			11,370					11,370											11,370	2.4	
Totals	35,290	665		35,955					35,955											35,955	7.4	
AUSTRALASIA:																						
Australia	1,065			1,065					1,065											1,065	0.2	
New Zealand	235			235																235	0.0	
Australasia ³	1,298			1,298					1,300				400							4,381	1.2	
Totals	2,598			2,598					2,665		21,069		400							21,469	5.0	
Grand totals	219,717	17,625	8,535	245,877	67	3,178	800	13,380	263,302	1,996	136,456	281	1,538	24,944	6,048	10,899	39,218	221,390	417,485	109,100	0.0	
Per cent of total cargo:																						
May, 1922	45.3	3.6	1.8	50.7		0.6	0.2	2.7	54.2	0.4	28.1		0.3	5.1	1.3	2.3	8.1	45.6	0.1	100.0	...	
April, 1922	39.7	11.7	1.0	52.4		1.0	0.3	3.8	57.6	1.5	28.0		0.3	2.4	0.9	0.5	6.8	41.0	0.5	...	...
May, 1921	25.2	2.7	8.6	36.5		1.5	0.2	3.5	41.7	0.5	28.8	0.2	1.6	4.1	1.7		18.7	55.6	0.7	...	...

¹ Figures represent tons of 2,240 pounds.² Includes both local and transfer cargo.³ Cargo not routed so as to allow segregation between definite ports.

Origin and Destination of Cargo—Atlantic to Pacific, May, 1922.¹

From—	SOUTH AMERICA.						NORTH AMERICA.						FAR EAST.						AUSTRALASIA.			Grand totals.	Per cent of total cargo.	
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. ²	Total, South America.	West coast of United States.	Canada.	Central America. ³	Mexico.	West coast of North America. ²	Total, North America.	China.	Japan.	Philippines.	Various Far East. ²	Total, Far East.	New Zealand.	Australia.	Australasia. ²	Total.			Hawaii.
NORTH AMERICA:																								
United States—																								
North Atlantic ports...	4,235	86	468	3,040	13,202	21,031	153,283	1,200	370	1,008	500	156,361	30,034	57,762	1,115	91,900	180,811	25	60	20,858	26,943	120,385	57.2	
South Atlantic ports...	6,000					6,000	7,372					7,372	1,792	1,268	747	646	4,453						17,825	2.6
Gulf ports...	465				1,030	1,495	23,276					23,276	43,268	11,474	7,940	15,786	78,408						103,239	15.3
Total, United States.	10,700	86	468	3,040	14,232	28,526	183,931	1,200	370	1,008	500	187,009	75,094	70,504	9,802	108,332	263,732	25	60	20,858	26,943	120,506	75.2	
Cristobal ⁴ ...	239	363	138	341	2,306	3,387	4,139		416	155		4,710											8,097	1.2
East coast of Mexico...	44,109					44,109	150		4,687			4,837						382	1,164	1,300	2,846		48,946	7.3
East coast of Canada.								6,600				6,600		5,000			5,000						2,846	0.4
West Indies...																							11,600	1.7
Total, North America.	55,048	449	606	3,381	16,538	76,022	188,220	7,800	5,473	1,163	500	203,156	75,094	75,504	9,802	108,332	268,732	407	1,224	28,158	29,789	120,577	81.9	85.8
EUROPE:																								
Belgium...	290			189		479	11,474	817				12,291						3,890	6,654	4,391	14,935		12,770	1.9
British Isles...	6,917		20	4,435	11,686	23,058	5,392	1,457				6,849											44,842	6.7
France...							437					437											437	0.1
Germany...	1,262		102	123	3,335	4,822	315		999			1,314											6,136	0.9
Norway-Sweden...							1,696		320			2,016											2,016	0.3
Italy...	1,596		13	7		1,616																	1,616	0.2
Holland...	746			59		805	11,521	200	25			11,746											12,551	1.9
Europe ⁵ ...			32		6,736	6,768	1,348	89				1,437											8,205	1.2
Total, Europe.	10,811		167	4,813	21,757	37,548	32,183	2,563	1,344			36,090						3,890	6,654	4,391	14,935		88,573	13.2
EAST COAST OF SOUTH AMERICA.																								
Grand totals.	65,859	1,024	773	8,194	38,295	114,145	226,671	10,426	6,817	1,163	500	245,577	75,094	75,604	9,802	108,332	268,832	4,297	7,878	32,549	44,724	120,673	398,100	0
Per cent of total cargo:																								
May, 1922...	9.8	0.2	0.1	1.2	5.7	17.0	33.7	1.5	1.0	0.2	0.1	36.5	11.1	11.2	1.5	16.1	39.9	0.6	1.2	4.8	6.6	100.0	...	...
April, 1922...	10.0	0.5	0.1	1.9	5.0	17.5	32.9	1.8	2.3			37.0	10.7	16.2		5.6	32.5	4.7	0.7	5.0	10.4	2.6	...	...
May, 1921...	9.2	0.3	0.1	4.7	5.1	19.4	36.5	0.1	3.0			39.6	5.4	6.5	0.9	11.6	24.4	5.6	2.6	7.8	16.0	6	...	...

¹ Figures represent tons of 2,240 pounds.² Cargo not routed so as to allow segregation between definite ports.³ Includes 333 tons for Balboa, C. Z.⁴ Includes both local and transit cargo.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Three Weeks Ending June 17, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Ebro.	Pacific Steam Navigation Co.	May 28.	May 29.	11	83
Atenas.	United Fruit Co.	May 28.	May 29.		101
Gen. G. W. Goethals.	Panama Railroad Steamship Line.		May 29.		2,902
Laura C. Hall.	Pacific Metals Corp.		May 30.		33
Albaro.	Italian Line.		May 30.		925
Aysen.	Chilean Line.		May 30.		575
Cauca.	Pacific Steam Navigation Co.		May 31.		1,160
Orenatula.	Anglo-Saxon Petroleum Co.	May 28.	May 31.	8,000	
Eiger.	Caribbean Steamship Co.	May 28.	June 3.	60	
Columbia.	N. O. & S. A. Steamship Line.	May 29.	May 29.	250	230
Poseidon.	Royal Netherlands W. I. Mail.	May 29.	May 30.		814
Heredia.	United Fruit Co.	May 29.	June 1.	770	142
Calamares.	United Fruit Co.	May 30.	May 31.	310	182
Ecuador.	Pacific Mail Steamship Co.	May 30.	May 31.	83	428
Tivives.	United Fruit Co.	May 31.	June 1.	391	¹ / ₂
Metapan.	United Fruit Co.	May 31.	June 1.	43	499
Salvador.	Pacific Steam Navigation Co.	May 31.		717	
Acajutla.	Pacific Steam Navigation Co.	June 1.		558	
Atenas.	United Fruit Co.	June 1.	June 1.	19	57
Orcoma.	Pacific Steam Navigation Co.	June 1.	June 2.	15	38
Gladiator.	Leyland Harrison Line.	June 2.	June 3.	390	
Urubamba.	Peruvian Line.	June 2.		1,120	
Panama.	Panama Railroad Steamship Line.	June 2.		2,346	
Anna.	Caribbean Steamship Co.	June 3.		21	
San Benito.	United Fruit Co.	June 4.	June 4.	7 ¹ / ₂	109
Urubamba.	Peruvian Line.		June 6.		307
Abangarez.	United Fruit Co.	June 4.	June 7.	¹ / ₂	161
Italia.	N. O. & S. A. S. Line.	June 5.	June 5.	48	(¹ / ₂)
Kinderdijk.	Holland-American Line.	June 5.	June 5.	2	203
Van Rensselaer.	Royal Netherlands W. I. Mail.	June 5.	June 5.	19	(¹ / ₂)
Salvador.	Pacific Steam Navigation Co.		June 8.		216
Parismina.	United Fruit Co.	June 5.	June 8.	766	197
Newport.	Pacific Mail Steamship Co.	June 5.	June 9.	1,283	1,332
Pastores.	United Fruit Co.	June 6.	June 7.	376	162
Dillwyn.	Columbus Shipping Co.	June 6.	June 7.	3,000	(¹ / ₂)
Puerto Rico.	French Line.	June 6.	June 8.	19	1,248
Conde de Churruca.	Anglo-Saxon Petroleum Co.	June 7.	June 8.	6,083	(¹ / ₂)
San Blas.	United Fruit Co.	June 7.	June 7.	17	54
Ortega.	Pacific Steam Navigation Co.	June 8.	June 9.	114	(¹ / ₂)
Acajutla.	Pacific Steam Navigation Co.		June 9.		600
Panama.	Panama Railroad Steamship Line.		June 9.		1,710
Montserrat.	Spanish Line.	June 9.		90	
Van Rensselaer.	Royal Netherlands W. I. Mail.	June 9.	June 10.	200	(¹ / ₂)
Imperial.	Chilean Line.	June 9.		504 ¹ / ₂	
Mayebashi Maru.	Nippon Yusen Kaisha.	June 10.	June 10.	203	(¹ / ₂)
Alvarado.	Pacific Steam Navigation Co.	June 10.		329	
Carmarthenshire.	Pacific Steam Navigation Co.	June 10.		125	
Camito.	Elders & Fyffes, Ltd.	June 10.	June 10.	18	¹ / ₂
Alvarado.	Pacific Steam Navigation Co.		June 11.		438
Carmarthenshire.	Pacific Steam Navigation Co.		June 12.		300
Montserrat.	Spanish Line.		June 12.		346
Turrialba.	United Fruit Co.	June 11.	June 13.	(¹ / ₂)	392
Advance.	Panama Railroad Steamship Line.	June 11.	June 15.	1,080	98
Venezuela.	Pacific Mail Steamship Co.	June 12.	June 13.	1,005	92
Almagro.	Pacific Steam Navigation Co.	June 12.	June 13.	76	190
Delft.	Royal Netherlands W. I. Mail.	June 12.	June 14.	1	1,077
Laura C. Hall.	Pacific Metals Transp. Co., Ltd.	June 12.	June 14.	80	4
Imperial.	Chilean Line.		June 14.		913
Cartago.	United Fruit Co.	June 12.	June 15.	974	114
Huadlaga.	Peruvian Line.	June 12.		1,491	
Ulua.	United Fruit Co.	June 13.	June 14.	213	104
Texas.	French Line.	June 13.	June 14.	70	171
Haarlem.	Royal Netherlands W. I. Mail.	June 13.	June 15.	156	2
Colen.	Panama Railroad Steamship Line.	June 13.		1,521	
Stoaeh.	United Fruit Co.	June 14.	June 14.	269 ¹ / ₂	¹ / ₂
Carrillo.	United Fruit Co.	June 14.	June 15.	39	397
Australien.	Danish East Asiatic Co.	June 14.	June 15.	75	(¹ / ₂)
Hermes.	Royal Netherlands W. I. Mail.	June 14.	June 15.	26	534
Masellan.	Pacific Steam Navigation Co.	June 14.	June 16.	163	110
Saint Louis.	French Line.	June 14.	June 16.	2	228
Gen. G. B. Ernst.	Panama Railroad Steamship Line.	June 14.	June 17.	49	14
Tarap.	Reclut Line.	June 15.	June 15.	2	(¹ / ₂)
Garfield.	Grace Line.	June 15.	June 16.	117	(¹ / ₂)
Mauco.	Pacific Steam Navigation Co.	June 16.		409	
Cassina.	Pacific Mail Steamship Co.	June 16.		1,491	

* Pouch.

* No cargo discharged.

* No cargo laded.

Death of Joel M. Pratt.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 13, 1922.

To all concerned—The death of Mr. Joel M. Pratt, Superintendent of the Dredging Division, The Panama Canal, while on leave in the States, is announced, as having occurred under an operation at Baton Rouge, La., on June 11, 1922.

This announcement is made with a deep sense of personal as well as official loss. Mr. Pratt had a long and most valuable service to his credit in the Engineer Department, U. S. Army, when he accepted the position of Superintendent of Dredging, The Panama Canal, to which he was appointed May 25, 1918. His high professional skill, his devotion to duty, his high Christian character, and his unflinching courtesy to all with whom he came in contact, were such as to inspire confidence in his conduct of all his important duties, and earn him the unqualified respect of the Governor and Engineer of Maintenance, under whom he served, of his colleagues at head of other Canal divisions, and of the employees of the Dredging Division, whose earlier fine record of achievement in no respect suffered while under his charge. In his untimely death the Canal has lost a most efficient employee, and many of us a beloved and loyal friend.

As a mark of respect for his memory it is directed that on Thursday, June 15, all operations of the Dredging Division (excepting as to such as would imperil public property) be suspended for the space of 5 minutes, from 12 noon to 12.05 p. m.

JAY J. MORROW, Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended June 13:

Steamship *Dillwyn*, braze new copper patch on 5-inch expansion, on deck exhaust line, for fuel oil cargo pump.

PREVIOUSLY REPORTED.

Cable ship *Guardian*, heavy repairs to cable machinery; running repairs to engine and deck departments; tug *Favorite*, convert from coal burner to oil burner; dredge *No. 86*, miscellaneous heavy repairs.

The following vessels were at the Cristobal shops for repairs during the week ended June 19:

Steamships *Jamaica*, roll 12 tubes in boiler; open up sanitary tank on boat deck; clean pipe line; also furnish and fit new Y piece; supply 1 new key for office safe and alter existing key and lock; renew 3 lengths of steering chains; clean and paint ladies and men's bath rooms and water closets, 1 good coat, including baths; clean and cement wash sanitary tank on boat deck; supply and fit new dumping board in No. 1 hold in way of hatch; cement floor of men's water closet after painting with a minimum of 2-inch cement; furnish 1 boat spar; repair No. 1 hatch; calk boat deck; calk forward lifeboat; manufacture 3 hatch tarpaulins as follows: one 21' 4" by 15', one 17' 6" by 15', one 24' 4" by 15'; renew length of steam pipe casing on saloon deck, make fire hose nozzle to fit hose; renew port boiler pillar gauge drain pipe, furnish 6 mild steel pinching pins to sketch, furnish 3 mild steel pins for turning gear as sketch, furnish 24 bolts and nuts, $\frac{3}{8}$ " by 2"; repair several hand tools and lamps; furnish 12 brass screws to pattern for dynamo brushes; furnish 3 cast iron rings to gauge for dynamo engine; line up steering engine drum shaft and fit new brasses; anneal, test, and adjust steering chains; repair 1 set of cargo fall swivels; repair ventilator of forecastle head; *Manavi*, machine electric engine piston grooves; furnish new piston rings, 1 new crosshead pin and brasses and 2 crosshead and 2 crank pin bolts; furnish 4 pins for main bilge pump as sketch; face up 1 set of Weir's pump valve seats and guards; renew studs and pins; furnish 12 valves for Weir's pump as pattern; renew windlass crosshead pins and bushes and crank pin brasses; renew bowl glass on standard compass; fit stem bar to No. 1 lifeboat; fair and refit hand rails around No. 1 hatch; rails and stanchions outside first-class dining saloon entrance door on starboard side to be repaired and part renewed; renew 1 scupper pipe from boat deck; furnish 1 kelvite 10" compass card, furnish 1 log rotator; schooner *Arabia*, make 1 valve, bronze; steamships *Colon*, deck department repairs; *St. Louis*, repair piping, etc.; *General O. H. Ernst*, build up 2 hoister crank shafts and refasten driving pinions; *Brenta*, manufacture copper feed pipe; *Huallaga*, repair copper feed pipe; *Tolosa*, repair small crank shaft; U. S. Army transport *Chateau Thierry*, manufacture 2 condenser wrenches per sketch.

Official Circulars.

Absence of Engineer of Maintenance.

THE PANAMA CANAL,
EXECUTIVE DEPARTMENT,
BALBOA HEIGHTS, C. Z., June 19, 1922.

To all concerned—Effective to-day, and during the absence on leave of the Engineer of Maintenance, the Dredging Division will report directly to the Governor.

During the above period all matters usually handled by the Engineer of Maintenance will be routed to the Governor, who will make disposition of them.

The Assistant to the Engineer of Maintenance will report temporarily to Major Ridley.

JAY J. MORROW, Governor.

Revision of Telephone Directory.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., June 13, 1922.

HEADS OF DEPARTMENTS AND DIVISIONS:

The copy for a revised telephone directory, to be issued as of July 15, 1922, will go to the printer July 1. All changes or corrections in the present directory should be forwarded to the Supervisor of Telephones, Balboa Heights, not later than July 1. Proof corrections will be made to July 15.

C. A. McILVAINE, Executive Secretary.

Second-hand and Scrap Lumber.

THE PANAMA CANAL,
SUPPLY DEPARTMENT,

BALBOA HEIGHTS, C. Z., June 10, 1922.

HEADS OF DEPARTMENTS AND DIVISIONS:

Effective June 15, the following prices will be allowed by the Supply Department for second-hand lumber, scrap lumber, and serviceable lumber which may be included in material classified as scrap for which requests for purchase of small quantities are received from time to time:

Kind of lumber.	Credit to be allowed departments and divisions.	Issue and sales prices.	
		To departments and divisions.	To employees, individuals, and companies.
Flooring, second hand.....	\$20.00	\$25.00	\$30.00
Ceiling, second hand.....	20.00	25.00	30.00
Siding, second hand.....	20.00	25.00	30.00
Lumber, dimension sizes, second hand.....	12.00	16.00	20.00
Miscellaneous yellow pine and fir, serviceable lumber, included in material classified as scrap lumber.....	12.00	16.00	20.00
Miscellaneous fancy and hardwood lumber, including all classes of native lumber included in material classified as scrap lumber.....	(1)	(2)	(2)
Miscellaneous scrap lumber.....	7.00	8.00	

¹ Fifty per cent of stock card prices of the same kind of new lumber, less \$5 per thousand.

² Fifty per cent of stock card price of same kind of new lumber. ³ Carload.

The unit price above specified, except under the items of scrap lumber, are prices per thousand feet, board measure.

No second-hand lumber required for issue to settlers on Canal Zone lands will be sold to employees or outsiders at the present time.

R. K. MORRIS,
Chief Quartermaster.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 561.
PORT OF CRISTOBAL—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
June 9.	E. A. Beulah ¹ .	W. R. Paulson.	Colon.	June 12.	Montserrat.	Spanish Line.	Barcelona and wayports.
June 11.	Turrialba.	United Fruit Co.	New Orleans via Habana.	June 13.	Cristobal.	Panama Railroad Steamship Line.	Norfolk.
June 12.	Cartago.	United Fruit Co.	New Orleans.	June 13.	Turrialba.	United Fruit Co.	New Orleans via Bocas del Toro.
June 13.	Colon.	Panama Railroad Steamship Line.	New York via Haiti.	June 14.	Ulua.	United Fruit Co.	New York via wayports.
June 13.	Ulua.	United Fruit Co.	New York via Habana.	June 14.	Sixola.	United Fruit Co.	New York via Kingston.
June 13.	Sixola.	United Fruit Co.	New York via wayports.	June 15.	Cartago.	United Fruit Co.	New Orleans via wayports.
June 14.	Carrillo.	United Fruit Co.	New York via Kingston.	June 15.	Carrillo.	United Fruit Co.	New York via Colombia and Jamaica.
June 14.				June 15.	E. A. Beulah ¹ .	W. R. Paulson.	Colon.
1: Schooner.				PORT OF BALBOA.			
June 10.	Meriden.	General Steamship Corp.	San Fran. ² co.	June 11.	Meriden.	General Steamship Corp.	Arica.
June 11.	Anyo Maru.	Toyo Kisen Kaisha.	Hongkong.	June 13.	Anyo Maru.	Toyo Kisen Kaisha.	Valparaiso.
June 16.	Ginyo Maru.	Toyo Kisen Kaisha.	Valparaiso.	June 17.	Ginyo Maru.	Toyo Kisen Kaisha.	Hongkong.

*Other than ships passing through the Canal.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL 1922

PUBLISHED WEEKLY.

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The Panama Canal Record, Balboa Heights, Canal Zone, or

The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office at Cristobal, C. Z., under the Act of March 3, 1879.

Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., June 28, 1922.

No. 46.

CANAL WORK IN MAY.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of May, 1922:

BALBOA HEIGHTS, C. Z., June 17, 1922.

*The Honorable, the Secretary of War,
Washington, D. C.*

SIR: I have the honor to submit the following report of The Panama Canal for the month of May, 1922:

CANAL TRAFFIC.

The tonnage of commercial vessels transiting the Canal during May totaled 1,032,816 net tons, Panama Canal measurement, and has been exceeded but 3 times since the opening of the Canal. The cargo carried by vessels transiting the Canal in May totaled 1,158,507 tons, establishing a record second only to the month of January, 1921, when 1,177,053 tons of cargo passed through the Canal.

Cargo in transit through the Canal to the Far East totaled 268,832 tons, and is the highest of record. Practically all of this cargo originated on the east coast of the United States. The total cargo tonnage originating on the east coast of the United States totaled 403,970 tons, or 75 per cent of the total cargo tonnage passing from the Atlantic to the Pacific.

Another feature of the month's traffic was that the tonnage of American vessels through the Canal during May exceeded that of any previous month in the history of the Canal. Vessels of American registry furnished practically half of the tonnage through the Canal, paid approximately half of the tolls, and carried slightly more than half of the total cargo passing through the Canal. During the past calendar year the percentage of American shipping to the total was approximately 40 per cent.

The total number of vessels and craft of all kinds transiting the Canal during the month of May, 1922, as compared with the preceding month and with the corresponding month of last year, was as follows:

	May, 1922.	April, 1922.	May, 1921.
Commercial vessels.....	243	230	210
Noncommercial vessels.....	18	14	30
Launches, etc. (under 10 tons measurement).....	8	9	6
Total vessels and craft through Canal.....	267	253	246

In addition to the foregoing, Panama Canal equipment consisting of floating cranes, barges, dredges, tugs, launches, etc., was passed through the locks in May as follows:

	North- bound.	South- bound.	Total.
Gatun.....	9	7	16
Pedro Miguel.....	18	19	37
Miraflores.....	17	13	30
Totals.....	44	39	83

COMMERCIAL TRAFFIC.¹*Comparative Traffic Statistics.*

The following tabulations permit a ready comparison of commercial traffic through the Panama Canal during the month of May, 1922, with that of preceding months, along the lines indicated at the head of the various tables.

TONNAGE, TOLLS, AND CARGO CARRIED.

	May, 1922.	April, 1922.	May, 1921.	Average month for past year.
United States equivalent net tonnage.....	828,683	771,932	694,896	742,327
Panama Canal net tonnage.....	1,032,816	974,833	864,617	920,005
Registered gross tonnage.....	1,297,553	1,219,338	1,092,602	1,157,412
Registered net tonnage.....	822,290	772,828	692,747	737,980
Tolls.....	\$1,015,057.37	\$953,256.11	\$835,882.77	\$903,194.29
Tons of cargo.....	1,158,507	1,046,047	792,735	853,032

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED PER VESSEL.

	May, 1922.	April, 1922.	May, 1921.
United States equivalent net tonnage.....	3,410	3,356	3,309
Panama Canal net tonnage.....	4,250	4,230	4,117
Registered gross tonnage.....	5,340	5,301	5,203
Registered net tonnage.....	3,384	3,360	3,299
Tolls.....	\$4,177.19	\$4,144.59	\$3,980.39
Tons of cargo (including vessels in ballast).....	4,356	4,588	3,775
Tons of cargo (laden vessels only).....	5,149	4,755	4,086

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
May.....	19	82,257	\$84,545.85	90,617	16	75,593	\$72,813.55	92,242
June.....	17	96,199	94,577.11	68,809	11	53,936	53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134
January, 1922.....	28	138,928	141,404.35	119,413	20	108,921	111,440.00	86,862
February.....	25	117,512	116,235.50	94,548	19	89,832	84,133.82	84,330
March.....	34	162,572	161,738.65	141,648	25	128,988	124,465.78	123,657
April.....	24	114,283	110,272.10	137,207	26	131,193	130,010.00	118,662
May.....	32	152,260	153,626.80	173,128	23	108,686	111,151.00	108,319

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
May.....	9	39,614	40,180.00	48,489	21	97,257	\$92,380.47	114,107
June.....	17	86,361	78,770.14	65,945	11	49,370	48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,305.00	82,767
August.....	15	76,570	71,607.58	46,542	18	70,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,309	53,475.00	34,593	14	61,980	62,318.75	79,129
November.....	12	74,635	71,525.74	44,976	5	29,949	29,127.50	28,865
December.....	9	47,604	46,318.75	44,101	6	32,957	32,803.75	28,784
January, 1922.....	6	34,546	34,756.25	23,575	7	31,550	30,646.95	28,831
February.....	8	39,168	36,706.25	49,424	6	32,009	31,538.75	21,119
March.....	16	84,766	86,531.95	90,633	9	51,848	46,734.40	37,310
April.....	7	35,406	35,006.25	51,244	9	49,140	50,900.85	43,783
May.....	13	68,285	67,808.75	89,483	9	42,409	41,595.00	50,953

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial service pay tolls. Statistics on vessels not paying tolls are shown under "noncommercial traffic."

ORIGIN AND DESTINATION OF TONNAGE.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past year, the figures representing the Panama Canal net tonnage:

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscel- laneous.	Total.
1921.						
May.....	231,751	107,404	48,151	20,612	6,511	414,429
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,669
1922.						
January.....	279,870	153,315	30,271	18,398	31,910	513,764
February.....	273,996	146,572	30,477	19,061	17,899	488,005
March.....	382,213	144,630	17,223	21,389	20,586	586,041
April.....	305,725	138,836	15,443	17,508	43,176	520,688
May.....	403,970	118,012	26,305	22,529	23,897	594,713
Average month for past year.....	279,801	153,967	24,374	20,682	24,926	503,750

DESTINATION OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
1921.						
May.....	125,091	103,143	82,499	82,582	21,114	414,429
June.....	143,217	106,369	83,063	46,298	36,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,480	70,551	50,719	487,219
September.....	268,758	90,195	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,615	115,980	136,940	84,391	49,743	575,669
1922.						
January.....	170,927	112,160	100,878	83,526	46,273	513,764
February.....	151,388	107,476	107,197	94,271	27,673	488,005
March.....	195,833	105,532	149,697	83,107	51,872	586,041
April.....	145,819	121,973	121,594	81,436	49,866	520,688
May.....	184,282	142,801	178,176	49,410	40,044	594,713
Average month for past year.....	187,096	100,106	101,343	73,757	41,448	503,750

ORIGIN OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Austral- asia.	Miscel- laneous.	Total.
1921.						
May.....	174,128	137,258	12,407	81,086	45,309	450,188
June.....	116,521	112,474	18,740	75,400	23,040	346,175
July.....	174,412	99,745	41,084	70,124	22,197	407,562
August.....	229,629	110,248	20,628	68,661	48,894	478,067
September.....	118,453	84,212	14,762	30,814	46,262	394,503
October.....	252,645	124,560	37,720	41,436	42,018	498,379
November.....	189,942	126,381	23,556	6,581	56,934	403,394
December.....	195,969	135,952	28,194	39,616	41,844	441,575
1922.						
January.....	152,992	100,224	16,860	27,172	35,504	332,752
February.....	142,693	110,778	21,594	42,950	80,515	398,530
March.....	175,669	104,847	15,008	48,575	45,671	389,770
April.....	182,496	124,842	31,969	75,485	39,353	454,145
May.....	170,412	133,033	24,388	41,334	68,936	438,103
Average month for past year.....	187,379	110,648	23,728	49,735	44,025	415,515

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
1921.						
May	201,538	140,940	73,705	21,549	12,446	450,188
June	155,147	136,292	18,324	26,112	10,300	346,175
July	205,690	134,047	23,123	28,770	15,932	407,562
August	231,830	194,279	27,256	22,022	2,670	478,057
September	204,820	140,555	26,478	17,114	5,536	394,503
October	259,613	170,189	18,222	30,955	19,400	498,379
November	196,974	164,345	20,446	16,760	4,869	403,394
December	191,277	192,575	25,550	21,739	10,434	441,575
1922.						
January	115,392	168,337	26,831	16,489	5,703	332,752
February	163,919	172,900	31,767	18,242	11,702	398,530
March	134,687	193,267	34,969	18,724	8,123	389,779
April	169,493	242,087	6,615	20,266	15,684	454,145
May	165,143	224,244	17,474	16,637	14,605	438,103
Average month for past year	184,223	174,549	23,881	21,414	11,448	415,515

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of May, 1922, of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year.

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe		10.3		23.3
East coast of United States	28.5		44.4	
East coast of Mexico		26.8	7.9	
Cristobal, C. Z.		22.3	8.9	
West coast of United States		1.5		9.2
West coast of South America	42.6		20.2	
Australasia		33.0		20.3
Far East	75.8		2.8	

A detailed statement of traffic through the Panama Canal by trade routes for the month of May, 1922, was published in THE PANAMA CANAL RECORD under date of June 14, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes during May, 1922, as compared with the preceding month, and with the corresponding month of last year.

	Atlantic to Pacific.			Pacific to Atlantic.		
	May, 1922.	April, 1922.	May, 1921.	May, 1922.	April, 1922.	May, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise ports	32	24	19	23	26	16
United States and Far East	32	19	16	5	6	3
Europe and United States	5	6	4	11	7	15
United States and South America	13	18	11	19	17	16
Europe and South America	11	9	9	8	11	10
Cristobal and South America	10	8	9	8	10	10
Europe and Australasia	3	8	7	5	9	10
United States and Australasia	3	2	6	1	3	1
Europe and Canada	4	1	1	7	4	2
Mexico and United States			4			4
Mexico and South America	5	2	3	3		7
United States and Canada	2	3	1	4	2	1
Miscellaneous	14	21	10	15	14	15
Totals	134	121	100	109	100	110

	Atlantic to Pacific.			Pacific to Atlantic.		
	May, 1922.	April, 1922.	May, 1921.	May, 1922.	April, 1922.	May, 1921.
	Panama Canal net tonnage.			Panama Canal net tonnage.		
United States coastwise ports	152,260	114,283	82,257	108,686	131,193	75,593
United States and Far East	169,435	97,507	76,114	24,388	31,969	12,407
Europe and United States	23,309	31,536	19,986	55,260	39,681	74,933
United States and South America	55,713	55,628	36,887	64,825	60,000	42,873
Europe and South America	44,611	38,702	34,972	36,327	46,008	41,831
Cristobal and South America	17,876	13,518	15,354	13,334	18,060	16,272
Europe and Australasia	23,804	57,728	47,451	32,230	56,130	76,211
United States and Australasia	15,986	13,513	29,360	4,944	13,861	4,875
Europe and Canada	24,114	6,334	4,995	37,041	19,019	8,573
Mexico and United States			21,246			19,794
Mexico and South America	23,979	10,132	15,308	12,989		36,282
United States and Canada	9,657	18,665	7,133	19,639	5,064	5,020
Miscellaneous	33,969	63,142	23,366	28,440	33,160	35,524
Totals	594,713	520,688	414,429	438,103	454,145	450,188
	Tons of cargo carried.			Tons of cargo carried.		
	May, 1922.	April, 1922.	May, 1921.	May, 1922.	April, 1922.	May, 1921.
	Panama Canal net tonnage.			Panama Canal net tonnage.		
United States coastwise ports	173,128	137,207	90,617	108,319	118,622	93,242
United States and Far East	264,900	151,230	82,537	35,955	33,874	9,883
Europe and United States	19,522	29,054	7,522	92,495	55,368	112,892
United States and South America	28,546	46,155	25,942	81,393	89,037	50,597
Europe and South America	37,547	28,887	17,247	49,546	56,119	49,546
Cristobal and South America	3,132	3,026	20,091	5,218	6,486	7,294
Europe and Australasia	14,935	32,815	23,101	21,469	50,182	51,163
United States and Australasia	18,710	16,615	31,488	1,065	10,332	370
Europe and Canada	15,569	3,900		52,449	29,370	15,165
Mexico and United States			41,829			
Mexico and South America	44,109	19,600	29,012			
United States and Canada	15,300	22,559	4,400	21,322	6,634	3,775
Miscellaneous	38,000	71,385	7,537	15,878	27,590	17,485
Totals	673,398	562,433	381,323	485,109	483,614	411,412

TOLLS.

Under the present dual method of assessing tolls, the revenue from this source was \$1,015,057.37. Had the net tonnage as determined by the Panama Canal rules of measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$210,865.95. The additional tolls would have been contributed by nationality of vessels as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British	\$32,123.06	\$19,039.50	\$51,162.56
Chilean	3,983.45	2,990.00	6,973.45
Danish	1,084.45	3,420.00	4,504.45
Dutch	6,571.40	1,741.35	8,312.75
French	998.78	704.82	1,703.60
German	3,339.50	3,374.65	6,714.15
Italian	2,075.55		2,075.55
Japanese	4,624.80	833.95	5,458.75
Norwegian	3,934.60	2,171.05	6,105.65
Panaman		42	42
Peruvian	4,665.00	3,306.80	7,971.80
Swedish	2,010.35	1,947.40	3,957.75
United States	57,782.76	48,143.15	105,925.91
Totals	123,193.70	87,672.25	210,865.95

The additional tolls which would have been assessed against vessels of United States registry would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports	\$30,024.00	\$25,119.08	\$55,143.08
United States and Canal Zone ports	566.30	295.95	862.25
United States and United States possessions		4,417.50	4,417.50
United States and foreign ports	27,192.46	16,184.85	43,377.31
Between foreign ports		2,125.77	2,125.77
Totals	57,782.76	48,143.15	105,925.91

Of the \$210,865.95 additional revenue that would have been collected by using the Panama Canal rules of measurement exclusively, \$8,972.40 represents the additional tolls that would have been collected on account of deck cargo.

AVERAGE TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate of such tolls per cargo ton varying in different vessels and in vessels of different nationalities with the ratio of cargo tonnage to net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of May, 1922, by nationality of vessels.

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$0.83	\$0.94	\$0.87
Chilean.....	5.13	4.58	4.88
Danish.....	1.08	.57	.65
Dutch.....	.95	.70	.91
French.....	1.61	1.86	1.72
German.....	1.09	.67	.80
Japanese.....	.73	.80	.76
Norwegian.....	.71	.80	.73
Italian.....	4.17		4.17
Peruvian.....	4.44	.98	1.83
Swedish.....	1.96	.51	.84
United States.....	.77	.85	.80
Average rate for all vessels, May, 1922.....	.82	.86	.84
Average rate for all vessels, April, 1922.....	.86	.91	.89
Average rate for all vessels, May, 1921.....	1.06	.89	.97

COMMODITY STATISTICS.

A classification of cargo passing through the Panama Canal during the month of May, 1922, has been compiled from declarations of cargo and manifests submitted by the ships' masters, and while incomplete, it is indicative of the kind and quantity of the various commodities carried by vessels transiting the Canal. From the cargo declarations and manifests submitted it was possible to classify by commodities 77 per cent of all cargo passing from the Atlantic to the Pacific and 93 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith, the figures representing tons of 2,240 pounds.

Commodity.	May, 1922.	April, 1922.	May, 1921.
Atlantic to Pacific.			
Manufactured goods:			
Iron and steel.....	195,005	94,160	51,824
Machinery.....	20,347	6,179	9,416
Railroad material.....	18,139	24,090	10,752
Textiles, etc.....	13,360	5,431	5,709
Oils:			
Crude petroleum.....	41,848	29,834	87,720
Refined oils.....	97,091	36,854	47,371
Other.....	1,327	7,033	597
Coal and coke.....	21,075	56,414	26,096
Metals, various.....	17,627	12,854	6,627
Sulphur.....	12,373	3,800	10,500
Cresote.....	10,496		
Paper.....	9,102	3,311	863
Glass.....	6,122	3,536	765
Sugar.....	6,640	41,173	
Asphalt.....	5,891	998	
Cement.....	3,995	4,762	3,121
Cotton.....	3,943	2,412	9,514
Chemicals.....	3,275	526	300
Tobacco.....	2,668	973	3,168
Liquors.....	645	1,149	1,533
Miscellaneous.....	182,429	226,944	105,447
Total, Atlantic to Pacific.....	673,398	562,433	381,323
Pacific to Atlantic.			
Lumber.....	96,637	102,194	31,099
Wheat.....	71,697	79,325	91,620
Oils:			
Crude petroleum.....	19,264	10,177	44
Refined oils.....	22,525		
Vegetable, etc.....	1,882	5,268	285

Commodity.	May, 1922.	April, 1922.	May, 1921.
Pacific to Atlantic—Continued.			
Ores:			
Iron.....	21,006		8,000
Copper.....	9,245	7,439	1,135
Other.....	5,483	4,031	1,926
Sugar.....	35,398	23,568	41,571
Nitrate.....	29,565	79,325	43,504
Barley.....	18,411	19,360	7,294
Metals:			
Copper.....	15,148	11,388	11,289
Other.....	951	5,028	916
Wool.....	14,147	21,932	15,125
Coffee.....	13,334	12,350	9,476
Cold storage, mutton, etc.	11,874	18,408	34,146
Canned goods:			
Fish.....	5,639	4,964	3,304
Fruit.....	5,707	10,024	5,979
Other.....	1,617	1,318	833
Cacao.....	7,590	4,910	4,260
Flour.....	6,533	9,245	27,186
Cotton.....	3,760	2,801	2,020
Borax.....	3,646	3,424	1,850
Beans.....	2,663	3,465	3,023
Other and general.....	61,387	43,670	65,527
Totals, Pacific to Atlantic.....	485,109	483,614	411,412

CLASSIFICATION OF COMMERCIAL TRAFFIC BY NATIONALITY, MAY, 1922.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	40	144,707	178,342	222,860	139,754	\$176,889.82	204,298
Chilean.....	3	4,883	8,406	10,341	6,193	6,103.75	1,189
Danish.....	1	4,207	5,286	5,296	3,325	5,258.75	4,851
Dutch.....	4	13,076	19,092	21,057	13,106	16,345.00	17,225
French.....	3	8,536	9,711	13,191	8,370	10,244.50	5,976
German.....	3	6,338	9,341	10,726	6,286	7,922.50	7,245
Italian.....	2	6,057	8,039	10,536	6,122	7,571.25	1,815
Japanese.....	7	28,333	33,229	42,644	27,565	35,250.00	48,015
Mexican.....	1	721	919	1,415	859	661.68	
Norwegian.....	6	20,276	23,915	30,279	18,855	25,147.40	35,537
Peruvian.....	3	3,708	7,750	12,325	6,031	4,635.00	1,043
Swedish.....	2	3,593	5,418	6,002	4,441	4,491.25	2,291
United States.....	59	228,417	285,265	355,747	226,798	277,912.92	343,913
Totals, May, 1922.....	134	472,852	594,713	742,419	467,705	578,433.82	673,398
Totals, April, 1922.....	121	409,406	520,688	650,055	410,266	505,319.46	562,433
Totals, May, 1921.....	100	334,894	414,429	529,408	334,322	412,934.09	381,323
From Pacific to Atlantic.							
British.....	31	101,036	122,687	160,727	99,929	122,721.50	114,515
Chilean.....	2	3,608	6,250	8,333	6,086	4,510.00	984
Danish.....	4	11,990	15,118	18,838	12,746	14,922.00	26,363
Dutch.....	1	1,605	3,123	2,672	1,629	2,006.25	2,856
French.....	3	10,612	11,401	13,818	8,700	11,970.30	5,569
German.....	4	9,019	12,191	13,849	8,095	11,273.75	16,889
Japanese.....	4	16,997	17,960	23,411	16,439	20,718.05	25,818
Norwegian.....	6	10,072	12,212	15,293	9,919	12,560.15	15,748
Panamanian.....	1	14	14	14	14	10.50	
Peruvian.....	2	2,504	5,364	7,922	3,941	3,130.00	3,192
Swedish.....	2	3,652	5,427	6,118	4,469	4,565.00	8,549
United States.....	49	184,722	226,356	284,139	182,618	228,236.05	264,626
Totals, May, 1922.....	109	355,831	438,103	555,134	354,585	436,623.55	485,109
Totals, April, 1922.....	109	362,526	454,145	569,283	362,562	447,936.65	483,614
Totals, May, 1921.....	110	360,002	450,188	563,194	358,425	422,948.68	411,412
Combined traffic both ways.							
British.....	71	245,743	301,029	383,587	239,683	299,611.32	318,813
Chilean.....	5	8,491	14,656	18,674	12,279	10,613.75	2,173
Danish.....	5	16,197	20,404	24,134	16,071	20,180.75	31,214
Dutch.....	5	14,681	22,215	23,729	14,735	18,351.25	20,081
French.....	6	19,148	21,112	27,009	17,070	22,214.80	11,545
German.....	7	15,357	21,532	24,575	14,381	19,196.25	24,134
Italian.....	2	6,057	8,039	10,536	6,122	7,571.25	1,815

CLASSIFICATION OF COMMERCIAL TRAFFIC BY NATIONALITY, MAY, 1922—Continued.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
Combined traffic both ways—ctd.							
Japanese.....	11	45,330	51,189	66,055	44,004	\$55,968.05	73,833
Mexican.....	1	721	919	1,415	859	661.68	
Norwegian.....	12	30,348	36,127	45,572	28,774	37,707.55	51,285
Panamanian.....	1	14	14	14	14	10.50	
Peruvian.....	5	6,212	13,114	20,247	9,972	7,765.00	4,235
Swedish.....	4	7,245	10,845	12,120	8,910	9,056.25	10,840
United States.....	108	413,139	511,621	639,886	409,416	506,148.97	608,539
Totals, May, 1922.....	243	828,683	1,032,816	1,297,553	822,290	1,015,057.37	1,158,507
Totals, April, 1922.....	230	771,932	974,833	1,219,338	772,828	953,256.11	1,046,047
Totals, May, 1921.....	210	694,896	864,617	1,092,602	692,747	835,882.77	792,735

LATIN-AMERICAN TRAFFIC.

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British.....	19	53,088	62,539	85,547	52,512	\$64,243.87	80,250
United States.....	11	37,466	45,905	59,726	37,445	39,361.12	31,407
German.....	3	6,338	9,341	10,726	6,286	7,922.50	7,245
Chilean.....	3	4,883	8,406	10,341	6,193	6,103.75	1,189
Peruvian.....	3	3,708	7,750	12,325	6,031	4,635.00	1,043
Japanese.....	2	7,248	8,741	11,075	6,826	9,060.00	9,876
Italian.....	2	6,057	8,039	10,536	6,122	7,571.25	1,815
Dutch.....	2	4,236	6,927	6,832	4,218	5,295.00	4,884
French.....	2	4,417	4,935	6,772	4,347	5,095.75	795
Swedish.....	1	1,340	1,399	2,257	1,583	1,675.00	1,495
Norwegian.....	1	881	1,479	1,493	873	1,101.25	256
Mexican.....	1	721	919	1,415	859	661.68	.....
Totals, May, 1922.....	50	130,383	166,380	219,045	133,295	152,726.17	140,255
Totals, April, 1922.....	54	147,213	184,541	238,391	149,176	178,585.16	166,630
Totals, May, 1921.....	44	111,120	141,244	188,846	114,821	137,893.60	135,262

PACIFIC TO ATLANTIC.

British.....	19	45,795	55,947	75,093	46,010	\$51,443.85	45,953
United States.....	13	40,667	49,921	64,922	40,480	49,658.75	63,768
German.....	4	9,019	12,191	13,849	8,195	11,373.75	16,889
Norwegian.....	4	4,332	5,258	6,775	4,123	5,290.00	4,428
French.....	2	6,244	7,032	8,570	5,371	6,727.50	168
Danish.....	2	4,777	5,197	6,229	3,939	5,905.75	9,497
Chilean.....	2	3,608	6,250	8,333	6,086	4,510.00	984
Peruvian.....	2	2,504	5,364	7,922	3,941	3,130.00	3,192
Dutch.....	1	1,605	3,123	2,672	1,629	2,006.25	2,856
Swedish.....	1	1,349	1,458	2,316	1,630	1,686.25	2,700
Totals, May, 1922.....	50	119,900	151,741	196,681	121,404	141,732.10	150,435
Totals, April, 1922.....	48	106,178	140,959	184,303	112,161	130,237.44	163,347
Totals, May, 1921.....	57	146,917	182,164	238,836	150,240	157,245.85	116,236

A further classification of commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
London.....	126	562,530	\$555,234.25	99	414,135	\$416,744.60
Ballast.....	8	32,183	23,199.57	7	23,891	17,467.20
Tug.....				1	63	26.25
Launch.....				1	14	10.50
Warship.....				1	(*)	2,375.00
Totals.....	134	594,713	578,433.82	109	438,103	436,623.55

* Displacement tonnage of 4,750.

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Steamships.....	123	564,126	\$549,275.82	100	421,656	\$418,623.40
Motor ships.....	6	27,821	26,235.00	3	14,899	13,814.50
Motor schooners.....	3	998	795.75	2	144	157.50
Sailing vessels.....	1	1,620	2,016.25	1	1,327	1,616.40
Tug.....				1	63	26.25
Warship.....				1	(1)	2,375.00
Barges.....	1	148	111.00			
Launch.....				1	14	10.50
Totals.....	134	594,713	578,433.82	109	438,103	436,623.55

¹ Displacement tonnage of 4,750.

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships and other noncargo-carrying vessels, is shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	3	10,424	\$7,509.72	4	17,085	\$12,301.20
French.....	1	854	638.25	1	2,096	1,616.25
Mexican.....	1	919	661.68			
United States.....	3	19,986	14,389.92	2	4,710	3,549.75
Totals.....	8	32,183	23,199.57	7	23,891	17,467.20

NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Panama Canal free of tolls during the past month. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated. This statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Canal; these, although paying tolls are not included in the commercial traffic:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
U. S. naval vessels:						
Transport.....	1	¹ 3,992	\$4,990.00			
Cruisers.....	1	² 4,400	2,200.00	1	² 3,200	\$1,600.00
Subchasers.....	3	¹ 108	81.00			
Tug.....	1	² 1,000	500.00			
Launch.....	1	¹ 10	7.50			
Battleship.....				1	² 28,400	14,200.00
Navy supply ship.....				1	¹ 4,406	5,507.50
Submarines.....				2	² 2,000	1,000.00
U. S. Army transport.....	1	¹ 5,388	6,735.00			
U. S. Coast Guard tug.....	1	¹ 74	92.50			
Commercial vessel with supplies for U. S. Navy.....	1	² 5,664	6,796.80	1	² 5,664	6,796.80
Commercial, for repairs.....				1	² 3,524	4,228.80
Vessel of Colombian Government.....				1	¹ 26	19.50
Launches, etc.....	6	¹ 14	12.75			
Totals.....	16		21,415.55	8		33,352.60

¹ Registered net tonnage.

² Displacement tonnage.

³ Panama Canal net tonnage.

The vessels listed above, as transiting the Canal free of tolls, carried cargo as follows:

From Atlantic to Pacific ports.....	Tons. 15,067
From Pacific to Atlantic ports.....	9,061

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of May, 1922, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving..... tons..	47,447	3,003	50,450
Local cargo shipped..... tons..	2,561	531	3,092
Transit cargo arriving..... tons..	1,156,628	1,154,782	2,311,410
Transit cargo clearing..... tons..	1,176,818	1,164,552	2,341,370
Cargo received for transshipment..... tons..	25,307	207	25,514
Cargo transhipped..... tons..	29,665	125	29,790
Vessels supplied with bunker coal:			
Commercial other than Panama Railroad.....	41	6	47
Panama Railroad vessels.....	4		4
U. S. Army vessels.....	1	1	2
Total vessels supplied with coal.....	46	7	53
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	9,993	3,000	12,993
Panama Railroad vessels..... tons..	908		908
U. S. Army vessels..... tons..	1	22	23
Total coal supplied to vessels..... tons..	10,902	3,022	13,924
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	227	45	272
U. S. Army, excepting vessels..... tons..	286		286
Individuals and companies..... tons..	249		249
Total issues, miscellaneous..... tons..	762	45	807
Total issues from Panama Canal deposits:			
May, 1922..... tons..	11,664	3,067	14,731
April, 1922..... tons..	19,342	7,345	26,687
May, 1921..... tons..	36,465	968	37,433
Coal on hand, June 1, 1922..... tons..	128,208	14,127	142,335
Coal on hand, May 1, 1922..... tons..	133,395	17,194	150,589
Coal received during the month..... tons..	6,477		6,477
Fuel oil issues:			
Panama Canal departments..... bbls..	4,679	14,448	19,127
Panama Railroad Company..... bbls..	714		714
Army and Navy..... bbls..	152		152
Individuals and companies..... bbls..		189	189
Total issues and sales..... bbls..	5,545	14,637	20,182
Fuel oil on hand, June 1, 1922..... bbls..	26,345	44,928	71,273
Fuel oil on hand, May 1, 1922..... bbls..	31,890	59,565	91,455
Diesel oil issued during May, 1922..... bbls..	208		208
Diesel oil on hand, May 1, 1922..... bbls..	50,731	895	51,626
Diesel oil on hand, June 1, 1922..... bbls..	50,523	895	51,418
Oil pumped for individuals and companies..... bbls..	627,511	67,458	694,969
Miscellaneous transfers..... bbls..	5,819	12,621	18,440
Total oil handled..... bbls..	639,083	94,716	733,799
Admeasurement certificates:			
United States equivalent issued or made.....	28	2	30
Measured for Panama Canal net tonnage.....	2	1	3
Re-measured for Panama Canal net tonnage.....	19		19
Panama Canal net tonnage corrected.....	15	6	21
United States equivalent tonnage corrected.....	18	6	24
Services of harbor equipment:			
Tugs, total operating hours.....	361	281	642
Launches, total operating hours.....	1,149	1,052	2,201
Vessels repaired at Panama Canal shops:			
Commercial.....	38	17	55
Government.....	4	3	7
Canal equipment.....	9	12	21
Vessels dry-docked:			
Commercial.....	4	1	5
Canal equipment.....	2	2	4
Clearances issued.....	156	140	296
Bills of health issued.....	151	141	292

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal during May, 1922:

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Tonnage.		No. of ships.	Tonnage.	
		Registered gross.	Registered net.		Registered gross.	Registered net.
Ships entering.						
All vessels, including those transiting Canal.	295	1,577,336	1,006,799	261	1,390,205	894,547
Vessels entering the port but not transiting Canal.	54	256,017	154,089	7	30,683	19,319
Vessels transiting the Canal and handling passengers or cargo.	55	238,103	146,056	45	161,312	100,135
Ships clearing.						
All vessels, including those transiting Canal.	304	1,627,121	1,040,167	259	1,379,364	888,216
Vessels entering port but not transiting the Canal.	57	268,235	162,472	4	23,955	15,681
Vessels transiting the Canal and handling passengers or cargo.	60	267,333	164,179	46	166,183	103,185

MOVEMENT OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of May, 1922:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.	850	356	1,206	4	13	17
From Pacific ports.	214	36	250	166	42	208
Total disembarking.	1,064	392	1,456	170	55	225
Embarking:						
For Atlantic ports.	1,366	1,269	2,635	2		2
For Pacific ports.	189	72	261	193	91	284
Total embarking.	1,555	1,341	2,896	195	91	286
Remaining on board vessels:						
From Atlantic to Pacific ports.	329	1,054	1,383	347	1,005	1,352
From Pacific to Atlantic ports.	764	848	1,612	982	887	1,869
From Atlantic to Atlantic ports.	269	70	339			
From Pacific to Pacific ports.				28	505	533
Total remaining on board.	1,362	1,972	3,334	1,357	2,397	3,754
Total passengers arriving.	2,426	2,364	4,790	1,527	2,452	3,979
Total passengers departing.	2,917	3,313	6,230	1,552	2,488	4,040

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of May, 1922:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to:						
U. S. Government vessels.	\$125.00	\$38.04	\$653.07		\$41.60	\$857.71
Panama Railroad vessels.	24.00	406.79	4,096.86		747.17	5,274.82
Other commercial vessels.	1,111.61	2,253.20	12,417.94		462.24	16,249.99
Total sales, May, 1922	1,260.61	2,703.03	17,167.87		1,251.01	22,382.52
Total sales, April, 1922	1,545.13	4,140.21	21,009.23		1,710.27	28,404.84
Total sales, May, 1921	3,419.41	5,634.93	24,758.41	\$3,761.39	2,657.87	40,231.01
Sales at Balboa to:						
U. S. Government vessels.	254.23	1,418.03	4,466.01	36.03	225.68	6,399.98
Commercial vessels.	265.33	238.61	2,445.97	410.94	401.09	3,761.94
Total sales, May, 1922	519.56	1,656.64	6,911.98	446.97	626.77	10,161.92
Total sales, April, 1922	656.33	2,700.85	15,023.45	1,013.73	794.70	20,189.06
Total sales, May, 1921	948.16	7,444.72	18,177.70	1,433.46	554.36	28,558.40

LOCK OPERATION.

The following tabulations give the number of lockages, number of vessels passing through the locks, and the consumption of water for lockages, for the month of May, 1922, as compared with the preceding month, and the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	107	126	233	8	5	13	246
Pedro Miguel.....	105	132	237	13	16	29	266
Miraflores.....	106	129	235	16	10	26	261
Total lockages, May, 1922.....	318	387	705	37	31	68	773
Total lockages, April, 1922.....	314	353	667	43	34	77	744
Total lockages, May, 1921.....	321	284	605	30	46	76	681

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	116	138	254	15	17	32	286
Pedro Miguel.....	109	133	242	24	30	54	296
Miraflores.....	109	133	242	23	23	46	288
Total vessels, May, 1922.....	334	404	738	62	70	132	870
Total vessels, April, 1922.....	335	375	710	84	75	159	869
Total vessels, May, 1921.....	338	304	642	75	119	194	836

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	16	17	16
Canal equipment.....	16	37	30
Total noncommercial.....	32	54	46

The total consumption of water for lockages, loss in leakage, and for maintenance, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	985,460,000	891,290,000	756,700,000
Leakage.....	20,000,000	17,000,000	20,000,000
Total consumption, May, 1922.....	1,005,460,000	908,290,000	876,700,000
Total consumption, April, 1922.....	913,900,000	915,390,000	769,620,000
Total consumption, May, 1921.....	815,200,000	755,850,000	770,990,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorological and hydrographic conditions over the Canal Zone and vicinity during the month of May, 1922, are shown in comparative form:

Rainfall.	May, 1922.	May, 1921.	May—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Total rainfall for month:					
Pacific Section.....	10.50	7.85	12.13	4.95	9.18
Central Section.....	11.91	7.15	16.05	6.31	10.92
Atlantic Section.....	13.69	13.18	22.24	4.54	13.74
Over Gatun Lake watershed.....	13.73	9.15	17.88	6.18	11.82
Over Chagres River watershed above Alhajuela.....	16.90	11.47	20.51	5.69	12.65
Maximum recorded for month at any one point.....	25.48	14.08	30.51		
Minimum recorded for month at any one point.....	4.54	3.79		1.60	
Maximum recorded on any one day.....	4.45	4.30	10.86		
<i>Hydrography.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	1,999	1,091	5,220	491	2,220
Maximum momentary discharge for month.....	29,100	8,400	170,000		
Gatun Lake watershed total yield.....	5,154	2,109	8,665	1,417	4,885
Gatun Lake watershed net yield.....	4,605	2,109	7,964	583	4,306
Draft on Gatun Lake for lockages and power.....	2,017	2,056	2,056	1,067	1,684

¹ Maximum 24-hour rainfall recorded on the Isthmus since American occupation. Recorded at Porto Bello, December 28-29, 1909.

² Maximum momentary discharge of record. Occurred December 26, 1909.

³ Not including May, 1914.

SEISMOLOGY.

Slight seismic tremors were recorded on the Balboa Heights seismographs on the 22d, 23d, 25th, and 28th of the month. The approximate distances ranged from 100 to 140 miles.

ELECTRICAL DIVISION.

POWER AND WORK.

The gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., are shown in the following tabulation:

	May, 1922.	April, 1922.	May, 1921.
Gross output, K. W. H.:			
Gatun hydroelectric station.....	4,402,100	4,471,000	5,316,900
Miraflores steam plant.....	630	250	2,350
Combined gross output.....	4,402,730	4,471,250	5,319,250
Power distributed to consumers.....KWH..	3,712,543	3,743,444	4,413,164
Loss of power in plant auxiliaries, transmission and transformation.....KWH..	690.187	727.806	905.986
Per cent of loss of power to gross output.....	15.67	16.27	17.03
Water consumption.....cubic feet..	3,535,378,063	3,589,299,000	3,990,308,000
Oil consumption.....barrels..	1,925	2,009	2,350

Miscellaneous electrical repairs and installations of electrical equipment were made on 11 vessels during the month. There were 298 work orders issued for work to be performed by the Electrical Division during the month, as compared with 257 for April, 1922.

SHOP, FOUNDRY, AND DRY DOCK WORK.

During the month miscellaneous repairs were made on 51 vessels at Cristobal and 32 vessels at Balboa. Of these, 6 were placed in dry dock at Cristobal and 3 at Balboa. The more important repair work carried out was as follows:

Barge No. 26 was cleaned, scaled, bottom and hopper painted, and miscellaneous repairs made. Dredge No. 86 was docked, the spud wells changed from round to square, and good progress was made on the remaining repairs.

All work on the ship's bottom incidental to conversion of the tug *Favorite* into an oil burner was completed during the month and the vessel removed from dry dock. It is expected that the oil tanks will be completed and the remaining installation made so that the vessel will be ready for service the latter part of June.

The *Lady Sybil* was docked, cleaned, painted and a periodic general overhaul given her for her owners.

The output of the foundry in patterns and castings for the month of May was as follows:

	April, 1922.			May, 1922.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	7	144	13,383	3	243	9,815
Steel.....	3	30	27,625	1	14	29,246
Nonferrous.....	4	86	1,903	4	326	6,069

The following is a statement of all job and blanket orders issued and completed during the month:

	Uncompleted, May 1.	Authorized in May.	Completed in May.	Uncompleted May 31.
Job orders.....	255	382	360	277
Blanket orders.....	361		11	350

DREDGING DIVISION.

Cucaracha and Barge Repair slides have shown no movement during the month. West Culebra slide continues to show some movement, determined by a resurvey of the base line along this slide. There was also a slight movement along the face of East Culebra slide. There was no interference with Canal traffic from slides during the month.

The total excavation for May, 1922, including earth and rock, was 304,300 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipment
	Earth.	Rock.			
5,350	1,350	4,000	Maintenance.....	<i>Gaillard Cut, East Culebra.</i> 1780-50 to 1781-50 E.....	<i>Paraiso.</i>
25,150	24,600	10,550	Maintenance.....	1780-50 to 1784-00 E.....	<i>Gamboa.</i>
36,800	17,700	19,100	Maintenance.....	<i>Gaillard Cut, Barge Repair.</i> 1728-50 to 1740-50 E. and W.....	<i>Gamboa.</i>
24,300	6,800	17,500	Maintenance.....	1746-50 to 1738-60 E. and W.....	<i>Paraiso.</i>
36,300		36,300	Maintenance.....	<i>Pacific Entrance, Miraflores P. I.</i> 2081-80 to 2093-80 W.....	<i>Cascadas.</i>
8,400	3,200	5,200	Maintenance.....	<i>Pacific Entrance.</i> 2179-30 to 2193-00 W.....	<i>Cascadas.</i>
67,000	67,000		Maintenance.....	2120-50 to 2118-00 W.....	<i>Cascadas.</i>
91,000	91,000		Maintenance.....	2334-00 to 2341-90 E.....	<i>No. 84.</i>
				2131-40 to 2149-40 C. L. W.....	<i>No. 84.</i>
304,300	211,650	92,650			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	101,600
Dumped on flats, west of Canal, Pacific entrance.....	91,000
Dumped on flats, east of Canal, Pacific entrance.....	67,000
Dumped at sea, Pacific entrance.....	44,700
Total.....	204,300

MUNICIPAL ENGINEERING DIVISION.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels, are shown below in comparative form.

	May, 1922.	April, 1922.	May, 1921.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	654,853,000	658,810,000	758,324,750
Filtration plants.....	379,450,000	380,175,000	472,802,000
Water consumed by Panama City.....	85,936,000	78,703,000	100,896,000
Water consumed by Colon.....	62,468,500	58,159,750	59,217,750
Sales of water to vessels.....	8,493,006	10,615,628	9,975,647

VITAL STATISTICS.

A total of 145 deaths occurred during the month of May, 1922, among the population of the Canal Zone and the cities of Panama and Colon, which is equivalent to an annual death rate of 14.18 per thousand. The 3 leading causes of death were pneumonia, tuberculosis, and diarrhea and enteritis; these 3 diseases caused 35 per cent of all deaths from disease. There was 1 death from malaria and 1 from dysentery. Of the total deaths, 46, or 32 per cent, occurred among children under 5 years of age. There were 8 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 287 live births reported during the month, and 17 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 29.74 per thousand and population. Deaths among children under 1 year of age numbered 29, giving an infant mortality rate, based on the number of births reported for May, of 101.05 per thousand live births.

Ninety-nine cases of malaria were reported during the month, of which 17 were employees and 82 nonemployees. These malaria cases originated as follows: Colon, 6; Canal Zone 72; and outside of the Canal Zone, 21.

Among other diseases reported during the month were 1 case of smallpox from the interior, 1 case of trachoma (soldier) and 3 cases of relapsing fever, contracted in the interior.

SCHOOLS:

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone, for the month of May, 1922:

	White.	Colored.	Total.
Gross enrollment.....	2,075	1,856	3,931
Net enrollment.....	1,894	1,806	3,700
Average daily attendance.....	1,441	1,302	2,743
Pupils neither absent nor tardy.....	771	454	1,225
Number of cases of tardiness.....	314	67	381
Number of teachers.....	77	32	109

OCCUPANTS OF QUARTERS.

Occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	As of May 31, 1922.				Total occupants.	
	Men.	Women.	Children.	Total.	April, 1922.	May, 1921.
Americans.....	2,332	1,868	2,039	6,239	6,347	7,828
Europeans.....	113	40	91	244	234	273
West Indians.....	3,915	2,584	5,643	12,142	12,311	11,819
Totals, May, 1922.....	6,360	4,492	7,773	18,625		
Totals, April, 1922.....	6,549	4,502	7,841		18,892	
Totals, May, 1921.....	7,981	4,532	7,407			19,920

WORKING FORCE—NUMBER OF EMPLOYEES.

The following tabulation shows the number of gold and silver employees as of May 17, 1922, by departments, together with a comparison of the working force for the preceding month and that of May, 1921:

	Employees as of May 17, 1922.			Total employees.	
	Gold.	Silver.	Total.	April, 1922.	May, 1921.
Operation and Maintenance:					
Office.....	29	56	85	84	77
Electrical.....	148	159	307	311	441
Municipal Engineering.....	71	495	566	600	862
Lock Operation.....	167	559	726	849	832
Dredging.....	131	592	723	757	929
Mechanical.....	318	553	871	838	1,659
Marine.....	154	364	518	511	658
Fortifications.....	42	253	295	341	302
Totals.....	1,060	3,031	4,091	4,291	5,760

	Employees as of May 17, 1922.			Total employees.	
	Gold.	Silver.	Total.	April, 1922.	May, 1921.
Supply Department:					
Transportation.....	30	140	170	173	
Quartermaster.....	138	829	967	929	1,936
Subsistence.....	5	76	81	226	357
Commissary.....	162	748	910	950	1,462
Cattle Industry—Plantations.....	7	385	392	356	180
Hotel Washington.....	8	84	92	94	96
Totals.....	350	2,262	2,612	2,728	4,031
Accounting Department.....	176	7	183	181	234
Health Department.....	214	728	942	961	1,082
Executive Department.....	498	246	744	739	839
Totals.....	888	981	1,869	1,881	2,145
Panama Railroad:					
Superintendent.....	47	208	255	297	426
Transportation.....	66	100	166	175	241
Receiving and Forwarding Agency.....	62	721	783	611	559
Coaling Stations.....	84	412	496	585	675
Totals.....	259	1,441	1,700	1,668	1,901
Grand totals, May, 1922.....	2,557	7,715	10,272		
Grand totals, April, 1922.....	2,598	7,940		10,568	
Grand totals, May, 1921.....	3,571	10,266			13,837

* Including 376 employees of old Building Division.

* The number of employees, as shown above, is the smallest force employed on the Canal since the middle of 1905.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, cash sales from stock, etc., are shown below in comparative form.

	May, 1922.	April, 1922.	May, 1921.
Material received on United States requisitions, chargeable as follows:			
Operation and maintenance.....	\$141,414.67	\$97,145.92	\$261,522.18
Construction and equipment.....			1,626.40
Miscellaneous.....	1,642.87	1,611.94	8,679.84
Totals.....	143,057.54	98,757.86	271,828.42
Cash sales on the Isthmus:			
Stock.....	20,772.75	31,649.39	36,066.36
Fuel oil.....	305.85	25.40	173.25
Scrap.....	769.24	521.37	649.73
Obsolete and second-hand material.....	3,528.02	2,391.96	1,939.87
Totals.....	25,375.86	34,585.12	38,829.21
Sales to steamships from storehouses.....	6,007.31	14,564.20	21,336.62

Respectfully,

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 21, 1922.

The Master of the steamship *Columbia* reports sighting, at 12.30 p. m., G. M. T., June 20, a floating log, 30 feet long, with branches protruding 10 feet under and over water. Lat. 10° 10' N., Long. 85° 58' W. Dangerous to navigation.

JAY J. MORROW,
Governor.

Notice to Mariners.—Aids to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 20, 1922.

The Minister of Marine, Peru, advises under date of May 16, 1922, as below:
"There has been installed in the port of Callao one whistling buoy with white sparkling light 2,800 meters to the North 321° of the old lighthouse of the extreme North in the Island of San Lorenzo.

Description—The luminous apparatus is located on a tripod placed on a cylindrical buoy painted RED.

Position—Lat. 12° 02'—39" S.

Long. 77° 16'—25" W. G.

Characteristic—Three seconds light, 2.7 seconds darkness. Sound (of whistling), intermittent.

NOTE.—The data of situation corresponds to English Chart No. 1853.

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 26, 1922.

U. S. A. T. *Cambrai*, at 6 a. m., G. M. T., June 25, Lat. 7° 47' N., Long. 83° 20' W., passed a tree 30 feet long, 20 inches in diameter, with projecting limbs. Dangerous to navigation.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the week ended June 25:

Steamship *Heredia*, braze copper pipe; *Crynnsen*, repair winch; *General H. F. Hodges*, overhaul motor of lifeboat on board; *Jamaica*, make 1 key for jacking gear; tug *San Juan*, dock and undock; clean bottom; repair hull; steamships *Felix Taussig*, manufacture new impeller; *Parismina*, braze copper pipe; motor schooner *Laura C. Hall*, repair fuel oil pipe; steamship *Advance*, acetylene weld feed pump head; acetylene weld ash hoist control valve; remove friction No. 2 cargo hoisting engine; repair valve on exhaust column from drain pipe; repair steam pipe on after dynamo; reinstall starboard engine room ventilator on main deck house; realign baker's oven; U. S. Army launch *David Putnam*, dock and undock; calk and copper sheath hull per specifications; U. S. Army, Jr. mine planter *Douglas*, dock and undock; clean bottom; etc.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Two Weeks Ending June 24, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Anyo Maru.....	Toyo Kisen Kaisha.....	June 11.....	June 13.....	1,014	359
Mineola.....	Grace Line.....	June 11.....	June 11.....		64
Venezuela.....	Pacific Mail Steamship Co.....	June 11.....	June 12.....	53	
Laura C. Hall.....	Pacific Metals Transp. Co., Ltd.....	June 12.....	June 12.....	4	
Kenuta.....	Pacific Steam Navigation Co.....	June 14.....	June 14.....		45
Laura C. Hall.....	Pacific Metals Transp. Co., Ltd.....	June 14.....	June 14.....		49
Jamaica.....	Pacific Steam Navigation Co.....	June 14.....	June 14.....	1	
Manavi.....	Pacific Steam Navigation Co.....	June 16.....	June 16.....	5	
Ginyo Maru.....	Toyo Kisen Kaisha.....	June 16.....	June 16.....		110
Colombia.....	Pacific Mail Steamship Co.....	June 17.....		14	51
Manavi.....	Pacific Steam Navigation Co.....	June 22.....	June 22.....		30
Rosana.....	Alberto Fait.....	June 24.....		140	
Lompoc.....	C. T. Bowring & Co.....	June 24.....		9,600	
Santa Ana.....	Pacific Mail Steamship Co.....	June 24.....		233	3

Olympia ¹	19	9 15	19 11	40 20	9 35	American	U. S. Navy	340 0	43 0	14 3	Gatun Lake	Cristobal	
North Dakota	20	7 09	20 9 10	20 9 10	9 10	American	U. S. Navy	510 0	85 0	31 0	Gatun Lake	Cristobal	
Delaware	20	7 14	20 9 30	20 9 30	9 30	American	U. S. Navy	510 0	85 0	31 0	Gatun Lake	Cristobal	
City of Bon-	20	1 30	20 16 20	20 16 20	17 05	British	Ellerman Hall Line	401 0	50 8	26 6	Portland	Leith	
All-America	19 17 49	21 6 29	21 13 20	22 8 50	American	American	All-America Cable Co.	278 4	37 0	19 6	Balboa	Cristobal	Cables, supplies
Santa Isabel	21 6 55	21 7 55	21 14 25	21 18 35	American	American	American & Cuban Steamship Co.	251 0	43 6	15 6	San Francisco	Cristobal	Cable
Pleades	21 9 00	21 9 38	21 16 27	21 16 27	American	American	Luckenbach Line	331 5	47 0	21 6	Seattle	New Orleans	General
Cape Ortelal	21 19 00	22 7 43	22 15 05	22 18 05	British	British	Lytle Steamship Co.	405 0	52 0	24 6	Portland	Dublin	Wheat
Toluca	22 3 00	22 8 44	22 16 03	22 16 03	Norwegian	Norwegian	W. Wilhelmsen	417 8	54 0	29 6	Punta Arenas	New York	Wheat
F. J. Lucken-	22 7 45	22 11 30	22 16 22	22 16 22	American	American	Luckenbach Line	446 0	56 1	23 0	San Pedro	Philadelphia	General
bach	22 7 00	22 11 30	22 17 57	22 15 02	Norwegian	Norwegian	Thos. Thoresen's Line	254 8	39 2	16 2	Guayaquil	New York	General
Sarrafos	23 1 30	23 8 04	23 15 16	23 15 16	Peruvian	Peruvian	Peruvian Line	367 3	46 0	17 8	Ilo	Cristobal	General
Mantaro	23 1 45	23 11 16	23 19 13	23 21 45	British	British	International Petroleum Co.	285 0	38 5	21 6	Talara	New York	General
Azov	23 1 45	23 11 16	23 19 13	23 21 45	British	British	International Petroleum Co.	285 0	38 5	21 6	Talara	New York	General
Cape Henry	23 13 20	23 1 08	23 20 27	24 2 00	American	American	Atlantic Gulf & Pacific Co.	376 4	52 3	24 0	Seattle	Baltimore	General
Bologna	23 13 45	23 14 30	23 21 42	24 15 10	Italian	Italian	Italian Line	284 0	46 0	17 0	Valparaiso	Genoa	General
Charlton Hall	23 18 00	24 7 05	24 15 10	24 15 10	American	American	U. S. Steel Products Co.	400 0	50 0	25 6	Tocopilla	Wilmington	Nitrate
Chad Harbor	23 20 00	24 7 49	24 16 23	24 16 23	American	American	U. S. Shipping Board	390 0	50 0	21 6	Seattle	Philadelphia	General
Alond City	24 14 10	24 14 35	24 20 22	24 20 22	American	American	U. S. Steel Products Co.	424 0	56 0	17 0	Honolulu	New York	General

⁴ Grain, lumber, and canned goods.⁵ Copper ore, wool, flax, and general.⁶ Crude oil and castings.⁷ Lumber, canned goods, salmon, and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
June 18	Atenas	United Fruit Co.	New Orleans via Habana.	June 18	San Bruno	United Fruit Co.	Boston.
June 18	San Bruno	United Fruit Co.	Boston via Port Limon.	June 19	Atenas	United Fruit Co.	Bocas del Toro.
June 19	French Line	United Fruit Co.	Havre via waypoints.	June 19	Colon	Panama Railroad Steamship Line	New York via Haiti.
June 20	Tolosa	United Fruit Co.	New York via Habana.	June 21	Cryssen	Royal Netherlands W. I. Mail	Port Limon.
June 20	Heredia	United Fruit Co.	New Orleans	June 21	San Gil	United Fruit Co.	Best via Port Limon.
June 20	Cryssen	Royal Netherlands W. I. Mail	Amsterdam via waypoints.	June 21	Tolosa	United Fruit Co.	New York via waypoints.
June 20	Asian	Leyland Line	Liverpool via waypoints.	June 22	Heredia	United Fruit Co.	New Orleans via waypoints.
June 21	San Gil	Hamburg-American Line	Boston via Habana.	June 22	Atenas	United Fruit Co.	New Orleans.
June 21	Adala	United Fruit Co.	Hamburg via waypoints.	June 22	Atenas	Hamburg-American Line	Port Limon.
June 22	Atenas	Buehfelds Fruit Co.	Bocas del Toro.	June 23	Perou	French Line	Kingston.
June 22	St. Michel	U. S. Army	Bluefields	June 23	Bayano	Elders & Fyffes, Ltd.	Puerto Colombia.
June 23	Cryssen	Royal Netherlands W. I. Mail	Port Limon.	June 24	Cryssen	Royal Netherlands W. I. Mail	Puerto Colombia.
June 24	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.				
June 24	Bayano	Elders & Fyffes, Ltd.	Port Limon.				
Tug.				PORT OF BALBOA.			
June 24	Rosana	Alberto Falt	Punta Arenas.	June 17	Sruga	Barber Line	Honolulu.
				June 21	Guardian	All-America Cable Co.	Calao.

*Other than ships passing through the Canal.

The "Favorite" Ready for Service Again.

The conversion of the salvage tug *Favorite* from coal to oil burning has been completed at Balboa shops, and the vessel is now ready for service. The oil tanks built in the ship have a capacity of 2,400 barrels, estimated to be sufficient for 24 days' steaming at 10 knots. This estimate is based on previous consumption of 24 tons of coal in 24 hours at 10 knots; on the basis that 2 tons of oil are equivalent to 3 tons of coal, the *Favorite* would use about 16 tons of oil, or 103 barrels, a ton consisting of 6.43 barrels. The use of oil will enable the *Favorite* to remain on a job approximately a month without refueling, though this would vary under varying conditions.

In connection with the change of fuel system, the vessel was given a general overhauling, the boilers, fresh water tanks, pumps, etc., being reconditioned, and repairs being made to the main and towing engines. The tail shaft was lined up and the stern bushing was re-woded. In all, the changes and overhauling cost approximately \$60,000.

The *Favorite* is to make a test trip in the Gulf of Panama, starting on June 29.

Firearms Permits.

The attention of all holders of, and prospective applicants for, firearms permits for the fiscal year beginning July 1, 1922, is invited to the requirement of submission of application (form 1319-3) in all cases, whether for renewal or new issue. In the case of hunting permits the application must be accompanied by the authorized fee of \$1. When renewing any class of firearms permit, the old expiring license card must accompany the application. Form 1319-3 may be obtained at all Canal Zone police stations.

Official Circulars.

Appointment.

THE PANAMA CANAL,
EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 20, 1922.
CIRCULAR No. 661-104.

Effective this date, Mr. Elwyn Greene is appointed Auditor, vice Mr. H. A. A. Smith, resigned.

JAY J. MORROW, Governor.

Death of Dr. Ciro Luis Urriola, Ex-President of Panama.

THE PANAMA CANAL,
EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., June 27, 1922.

To all concerned—As a mark of respect to the memory of Dr. Ciro Luis Urriola, ex-President of the Republic of Panama, whose death occurred yesterday and whose funeral takes place to-day, it is hereby ordered that the flags on all public buildings within the Canal Zone be half-masted until sunset this day.

JAY J. MORROW, Governor.

Street Traffic at Railroad Crossings.

PANAMA RAILROAD COMPANY,
OFFICE OF MASTER OF TRANSPORTATION,
BALBOA HEIGHTS, C. Z., June 22, 1922.
CIRCULAR No. 177.

To all concerned—Effective at once, the present system of controlling street traffic at railroad crossings during the day with red and white flags will be discontinued, and a white paddle bearing STOP on both sides will be used.

When trains are approaching or moving over crossing, flagmen will hold the paddle upright with sides bearing STOP facing street traffic,

which will be a signal for street traffic to halt and remain at a standstill during the time stop signal is displayed. When there are no trains approaching or movements being made over crossing, flagman will withdraw paddle, which will indicate that the way is clear for street traffic. At crossings protected by flagmen during night hours a white light will be substituted for the paddle to stop street traffic when trains are approaching or using crossing.

In the future red will be used to serve the intended purpose as prescribed by the rules, carrying its original and only indication—STOP—and will be so respected by all concerned with and in charge of rail movements regardless of where displayed. Crossing flagmen will be furnished a red flag to be used by day and a red light to be used at night for the purpose of signaling engineers of trains or yard crews moving equipment to stop in the event that some vehicle or person is on the thoroughfare between or sufficiently close to the rails to cause damage to vehicles or injury to persons or both, or at any other time when for some reason it may be necessary for trains or yard movements to be brought to a standstill.

When it is necessary for crews to make switching movements over street crossings or any public thoroughfare within yard limits not protected by flagmen or electric warning signal where the view of those using such crossing or thoroughfare is obscured to the extent of making accidents possible, the conductor will have one of the members of his crew protect crossing until switching movements over same have been completed.

All instructions relative to the above issued prior to this date are hereby canceled.

W. J. BISSELL,

Acting Master of Transportation.

Approved:

S. W. HEALD, Superintendent.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., July 5, 1922.

No. 47.

Traffic for Fiscal Year Ending June 30, 1922.

Final summaries of the traffic through the Panama Canal for the fiscal year ending June 30, 1922, have not been completed. Subject to minor corrections, however, the summaries for the past fiscal year as compared with the fiscal years of 1921 and 1920, are as follows:

	1922.	1921.	1920.
Number of vessels.....	2,736	2,892	2,478
Net tonnage, Panama Canal measurement.....	11,417,459	11,415,876	8,546,044
Tolls (exclusive of launches, etc.).....	\$11,197,832.41	\$11,276,889.91	\$8,513,333.15
Tons of cargo.....	10,873,000	11,599,214	9,374,499

* Approximate figure.

On the basis of the figures as above, the number of ships in the fiscal year just ended was 156 less than in the preceding year, a decrease of 5.4 per cent. Net tonnage was slightly greater, and tolls \$79,057.50 less, a decrease of seven-tenths of 1 per cent. The approximate figure for cargo indicates a decrease of about 725,000 tons, or about 6 per cent. The fiscal year 1921 was the year of greatest traffic through the Canal so far.

In the calendar year 1921 the number of commercial ships making the transit was 2,783. Net tonnage and tolls (11,435,811 tons and \$11,261,098 in tolls) were about the same as in the fiscal year just ended; and cargo, 10,707,005 tons, was less than the indicated total for the fiscal year 1922 by about 165,000 tons. The traffic for the fiscal year was, accordingly, at about the same rate as in the last calendar year.

Canal Traffic in June.

A total of 228 ocean-going commercial vessels transited the Canal during the month of June. Tolls on these vessels aggregated \$933,290.42 as compared with \$1,015,057.37 tolls for 243 vessels last month, and \$751,964.12 tolls for 192 vessels in the month of June, last year.

In addition to the above commercial traffic, 4 small nonseagoing launches transited the Canal during the month, on which tolls of \$10.20 were paid, and 24 U. S. Government vessels were passed through the Canal free of tolls.

Commercial traffic through the Canal in June was somewhat smaller than traffic for the preceding month, but was considerably in excess of commercial traffic through the Canal in June, 1921, and slightly above the average traffic during the fiscal year ending June 30, 1922.

Traffic from the Atlantic to the Pacific was greater than normal and has been exceeded but twice during the past fiscal year; during the past month the Atlantic to Pacific traffic comprised slightly more than 60 per cent of the total traffic through the Canal. Traffic from the Pacific to the Atlantic was unusually light, and with the exception of the month of January, was the smallest volume of traffic from the Pacific to the Atlantic of any month during the past fiscal year.

MOVEMENTS OF OCEAN VESSELS. Week ending at midnight, July 1, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Saba	24	15	25	6	15	25	25	17	American.	Pacific Mail Steamship Co.	419.0	56.0	28.8	Tampico.	Iquique.	Oil.	9,500	7,043	5,041
Tanacra	24	18	25	6	40	25	15	00	American.	U. S. Navy.	151.0	15.0	15.6	Norfolk.	Los Angeles.	General.	4,300	4,805	3,400
Arto	24	19	25	7	30	25	15	00	German.	Roland Line.	361.0	51.0	20.0	Antwerp.	Guayaquil.	General.	4,664	4,151	8,727
Mahara	25	12	25	13	00	25	19	36	British.	Shaw, Saville & Albion Co.	500.9	63.0	30.0	Glasgow.	Auckland.	General.	6,909	6,759	4,503
Santa Clara	25	8	26	6	19	26	16	30	American.	Atlantic & Pacific Steamship Co.	404.6	53.0	28.2	Newcastle.	Callao.	Coal and coke.	2,788	3,012	2,275
Nueva Chief	25	11	26	12	00	26	18	10	British.	Atkins & Dickinson.	289.0	40.0	21.0	New York.	Nauru Island.	General and coal.	2,471	9,151	6,227
Fino	25	18	26	12	08	26	18	35	British.	Pacific Steam Navigation Co.	450.0	57.0	26.3	New York.	Valparaiso.	General.	8,000	6,520	4,472
Felix Transit.	25	7	26	13	02	26	20	26	American.	Growth & Thurlow.	395.0	55.1	27.0	Boston.	Los Angeles.	General.	840	9,055	6,822
Tanacra	26	10	26	13	02	26	20	26	American.	U. S. Navy.	308.0	44.0	17.0	Guantanamo.	Balboa.	General.	4,781	4,826	3,361
Rapahan	26	10	26	13	02	26	20	26	British.	New Zealand Shipping Co.	457.0	58.0	21.0	London.	Wellington.	General.	8,150	10,385	7,503
De Amos	26	10	26	13	02	26	20	26	British.	Alfred Holt & Co.	392.0	47.0	22.0	Liverpool.	Los Angeles.	General.	4,557	8,514	6,063
Westmoreland.	26	17	27	8	45	27	10	27	British.	Federal Steam Navigation Co.	473.0	60.0	28.6	London.	New Zealand.	General.	4	132	72
Penik	26	20	28	7	50	28	13	51	British.	Holland-American Line.	469.0	58.3	23.6	Rotterdam.	Portland.	General.	15,551	10,491	7,546
Laura C. Hall	26	18	28	7	12	28	15	48	Dutch.	Pacific Metals Corp.	81.0	25.6	9.0	Cristobal.	Buenaventura.	Ballast.	6,108	4,945	3,508
Marore	26	7	28	8	15	28	15	05	American.	Ore Steamship Co.	550.0	72.0	21.0	Baltimore.	Cruz Grande.	General.	288	4,835	3,950
Victorian	26	7	28	8	15	28	15	05	American.	U. S. Steel Products Co.	380.0	50.0	23.0	Boston.	Portland.	General.	6,912	8,587	6,603
Crozier Hall	27	14	28	10	35	28	17	55	American.	American-Hawaiian Line.	497.0	58.0	25.10	New York.	Buenaventura.	General.	2,226	6,201	4,323
Saint Andre.	27	16	28	11	40	28	18	50	French.	French Line.	398.0	50.0	13.9	Bordeaux.	Valparaiso.	General.	8,667	7,611	5,450
Mantaro	27	16	28	11	40	28	18	50	Peruvian.	Peruvian Line.	360.3	46.0	19.2	Cristobal.	Ilo.	General.	8,500	7,820	5,233
Karouca	28	15	28	12	55	28	20	55	Peruvian.	Ellerman & Bucknell.	433.0	57.0	23.4	Cristobal.	Brisbane.	General.	1,801	4,439	3,139
Sinaba	28	4	29	7	59	29	13	51	British.	Clan Line Ltd.	254.0	35.0	13.0	Portsmouth.	Salina Cruz.	Ballast.	7,583	6,808	5,015
Brush	28	4	29	7	59	29	13	51	British.	North Atlantic & Western Co.	390.0	54.0	21.0	New York.	Seattle.	General.	5,015	11,487	8,732
Steel Ranger	29	1	29	12	03	29	16	43	American.	U. S. Steel Products Co.	424.2	56.2	27.0	New York.	Seattle.	General, steel.	2,442	7,112	4,896
Oreans	29	12	29	13	50	29	20	50	American.	Original Navigation Co.	395.0	55.0	27.0	New Orleans.	Los Angeles.	General.	3,644	5,919	4,400
Germie	29	7	29	13	50	29	20	50	British.	Andrew Weir & Co.	420.0	55.0	27.0	London.	Wellington.	General.	3,359	6,652	4,913
Nashville	29	7	29	13	50	29	20	50	British.	Anglo-American Oil Co.	450.0	58.0	12.3	Rotterdam.	San Francisco.	Ballast.	8,656	7,611	5,450
Lewis Luckenbach	29	7	29	13	50	29	20	50	British.	Anglo-American Oil Co.	450.0	58.0	12.3	Rotterdam.	San Francisco.	Ballast.	1,365	1,589	1,018
Irequis	29	14	30	7	58	30	15	30	American.	Luckenbach Line.	406.0	68.2	21.10	Philadelphia.	Seattle.	General.	9,389	8,376	6,376
Orion	30	5	30	9	32	30	17	29	British.	Anglo-American Oil Co.	470.0	69.0	18.0	Southampton.	San Francisco.	General.	2,442	7,112	4,896
Orion	30	5	30	9	32	30	17	29	British.	American-Hawaiian Line.	470.0	69.0	18.0	New York.	San Francisco.	General.	6,000	5,455	3,879
Ryufuku Maru	29	18	30	10	24	30	18	24	American.	Oriental Steamship Co.	376.0	52.0	24.0	New York.	San Francisco.	General.	3,644	5,919	4,400
Cosque	29	18	30	11	25	30	19	06	Japanese.	Kokusan Kisen Kaushiki Kaisha.	385.0	51.0	24.3	New York.	Taita.	General.	3,359	6,652	4,913
Wanaratta	29	18	30	12	40	30	20	27	American.	Grace Line.	394.2	52.3	25.0	New York.	Wellington.	General.	8,288	5,227	3,82
Almarrat	30	13	31	6	35	31	15	04	British.	British-India Steam Nav. Co.	450.0	58.0	29.0	London.	Yanama.	General.	8,656	7,611	5,450
Wanaratta	26	16	28	11	40	28	18	50	British.	U. S. Steel Products Co.	424.2	55.2	27.0	Cristobal.	Seattle.	General.	1,365	1,589	1,018
Knoxville City	30	14	31	7	17	31	15	2	American.	U. S. Steel Products Co.	424.2	55.2	27.0	Baltimore.	Seattle.	General.	1,365	1,589	1,018
Cruiser.	27	14	28	11	40	28	18	50	British.	Pacific Steam Navigation Co.	246.0	35.9	17.5	Cristobal.	Champerico.	General.	1,365	1,589	1,018

* Motor schooner.

* Cruiser.

* Coast Guard cutter.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Steel Worker.	24	15.10	25	7.17	25	14.40	25	21.25	American.	U. S. Steel Products Co.	424.2	56.2	25.6	Everett.	Boston.	General.	8,200	7,611	5,497
Wheaton.	25	12.30	25	7.52	25	14.42	25	15.08	American.	U. S. Shipping Board.	415.0	53.7	19.0	Honolulu.	New York.	Ballast.	735	2,947	2,113
Advance.	25	1.40	25	8.32	25	15.56	28	15.00	American.	Panama Railroad Steamship Line	295.0	38.5	20.3	Buenaventura.	Cristobal.	General.	3,877	7,099	6,117
Essequibo.	25	3.00	25	9.15	25	16.48	26	12.43	British.	Royal Mail Steam Packet Co.	450.0	58.0	25.0	Valparaiso.	New York.	General.	5,990	5,403	3,967
Cherry Branch.	25	3.00	25	10.12	25	17.20	25	19.32	British.	F. and W. Watson.	400.0	52.0	24.0	Valparaiso.	Liverpool.	General.			
Freeport Sulphur No. 5.	25	4.00	25	10.35	25	18.00	26	1.15	American.	Freeport Sulphur Transport Co.	355.5	52.5	21.8	Tacoma.	Philadelphia.	Lumber.	5,000	4,940	3,316
Santa Ana.	24	21.00	25	12.30	25	19.05	26	19.19	American.	Grace Line.	360.2	51.6	22.8	San Francisco.	New York.	General.	3,300	5,776	4,081
S. C. T. Dodd.	25	12.20	25	12.50	25	20.03	25	20.03	American.	Standard Oil Co.	425.8	57.2	23.2	San Francisco.	Philadelphia.	Bulk oil	10,000	7,481	4,975
Rhodopis.	25	21.00	26	6.54	26	16.11	26	23.13	German.	D. G. Kosmos.	435.0	53.0	22.0	Corral.	Hamburg.	General.	4,470	7,525	5,154
Almirante.	24	11.00	26	7.36	26	16.03	1	6.30	Panaman.	Marrigto Valencia	71.0	18.5	4.0	Panama.	San Blas.	Ballast.			
Laura C. Hall.	25	17.00	26	11.09	26	18.30	28	7.12	British.	Pacific Metals Corp.	81.0	28.0	9.6	Buenaventura.	Cristobal.	Coltee.	64	132	72
Panama.	26	10.20	26	11.02	26	18.15	27	2.00	American.	American-Hawaiian Line.	407.7	53.7	28.4	Tacoma.	Hamburg.	General.	7,500	7,098	5,029
Lompoe.	24	18.31	27	7.11	27	13.30	27	14.20	British.	C. T. Bowring & Co.	435.3	55.9	27.6	Paltova.	Tampico.	General.	7,496	5,311	
Cauca.	27	8.20	27	8.15	27	14.55	1	11.00	British.	Pacific Steam Navigation Co.	264.0	33.3	17.6	Champertico.	Cristobal.	Ballast.	1,200	1,500	1,018
Lisbon Maru.	27	8.20	27	10.40	27	17.59	27	20.30	Japanese.	Nippon Yusen Kaisha.	445.0	38.0	24.0	Yokohama.	New York.	General.	8,000	7,608	3,479
Cleveland Maru.	15	28	6.51	28	14.40	29	8.05	8.05	American.	U. S. Navy.	369.0	41.0		Balboa.	Cristobal.	General.	5,985	9,258	6,912
Mexican.	28	2.00	28	8.02	28	15.55	28	20.45	American.	American-Hawaiian Line.	472.3	57.2	24.0	Los Angeles.	New York.	General.	6,595	5,097	3,476
Benrimnes.	28	6.00	28	9.08	28	17.10	28	18.15	British.	Ben Line Steamers, Ltd.	405.0	51.5	24.0	Portland.	Queentown.	Wheat	250	4,552	3,182
Huasco.	27	21.00	28	14.10	28	20.40	2	7.25	Chile.	Chilean Line.	380.0	44.0	21.0	Talahuano.	Cristobal.	General.	682	1,213	692
Salvador.	28	18.20	29	7.22	29	13.50			British.	Pacific Steam Navigation Co.	215.0	33.5	14.6	Guayaquil.	Cristobal.	General.	3,744	7,901	5,629
Amur Maru.	29	9.45	29	10.32	29	17.49	29	20.40	Japanese.	Osaka Shosen Kaisha.	425.0	50.0	21.0	Singapore.	New York.	General.	6,400	6,020	4,363
Honduras.	30	8.50	30	9.57	30	17.40	2	15.00	French.	French Line.	404.9	51.7	25.0	Vancouver.	Dunkerque.	General.	6,400	6,020	4,363
Acapijula.	30	9.40	30	10.58	30	17.43			British.	Pacific Steam Navigation Co.	215.7	33.5	14.6	Champertico.	New York.	General.	530	1,272	706
Cuba.	30	8.00	30	11.05	30	17.46	2	12.30	American.	Pacific Mail Steamship Co.	307.7	46.2	17.3	San Francisco.	Cristobal.	General.	346	3,426	2,206
Safoa.	1	7.07	1	15.28					American.	U. S. Navy.	149.3	30.0		Balboa.	Cristobal.	General.			
Borgland.	1	8.30	1	9.10	1	16.43	1	16.43	Norwegian.	Peter Olsen.	372.0	52.0	25.0	San Francisco.	London.	General.	6,260	5,274	3,886
Lena Luckenbach.	1	9.10	1	9.53	1	16.59	1	16.59	American.	Luckenbach Line.	425.0	53.2	22.11	Seattle.	New York.	General.	4,661	7,217	5,295
Caddo.	1	7.15	1	11.46	1	18.49	1	18.49	American.	Standard Oil Co. of New Jersey.	414.5	55.0	27.6	Arica.	New York.	General.	8,036	6,437	4,442

* U. S. Navy tug.

* Coffee, skins, wood, and pearl shell.

* Coffee, sugar, and general.

* Coffee, sugar, hides, and general.

* Gasoline and naphtha.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
June 25.	Abangarez.	United Fruit Co.	New Orleans via Habana.	June 26.	Abangarez.	United Fruit Co.	Bocas del Toro.
June 26.	Parisma.	United Fruit Co.	New Orleans.	June 26.	St. Miniel.	U. S. Army.	New York via San Juan.
June 27.	United Fruit Co.	United Fruit Co.	New York via Habana.	June 28.	Calamares.	United Fruit Co.	Port Limon.
June 28.	Tivies.	United Fruit Co.	Colombian ports.	June 29.	Parisma.	United Fruit Co.	New Orleans via wayports.

** U. S. Army transport.

(Continued on page 594, column 2.)

The "Lompoc" Makes Three Transits in One Month.

The tanker *Lompoc*, operated by the Union Oil Company of California, made 3 passages through the Canal during June. On June 10 she made the transit northbound, on the way from Tocopilla, Chile, to Tampico, Mexico, in ballast, after having undergone repairs at Balboa shops; on June 24, returning from Tampico, the *Lompoc* passed through the Canal to deliver a cargo of oil at Balboa; and on the 27th she made the transit in ballast, bound for Tampico again. In all, the *Lompoc* paid \$13,464.09 in tolls in June; \$3,823.92 for each transit in ballast and \$5,806.25 for passage with cargo.

Coming of Japanese Training Squadron.

The training squadron of the naval school of the Imperial Japanese Navy, consisting of the cruisers *Iwate*, *Asama*, and *Isumo* is due to arrive at the Pacific entrance of the Canal on August 5, transit the Canal on August 7, and remain at the Atlantic entrance until August 11.

Decreased Depth at Rosalind Bank Reported.

Attention of masters plying between the Canal and Gulf ports or Habana is invited to the following Notice to Mariners published by the Hydrographic Office of the Navy under date of June 17:

(2174) *Caribbean Sea—Rosalind Bank—Decreased depth reported.*—The master of the British steamer *Spectator* reports that on May 23, 1922, at 10.15 a. m. he got a cast of the lead showing 6 fathoms, fine sand, in (approximately) 16° 28' N., 80° 41' W.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 3, 1922.

The master of the steamship *Fairbanks* passed 2 large floating spars in Lat. 7° 51' N., Long. 79° 45' W., at 5 p. m., July 2; this is in Panama Bay. Dangerous to navigation.

JAY J. MORROW,
Governor.

Staff Surveyor for Lloyd's to be Stationed at Canal.

Lloyd's have advised that it has been decided to station a staff surveyor at the Panama Canal, and that accordingly Mr. George Allan, at present one of the surveyors at New York, will take up his duties at Balboa on August 1. The appointments of those who have been serving on the Isthmus as acting surveyors will be terminated.

In transmitting this information, the Secretary of Lloyd's Register in New York has stated:

It is felt that the appointment will be in the interest of owners of vessels classed in the Society's Register Book and visiting the Panama Canal Zone, and will also be appreciated by other parties who may desire to avail themselves of the services for such surveys as he is empowered by the Society's Rules to carry out.

Fresh Fruit Shipped from Peru to New York.

The shipment of fresh fruit during the winter and early spring from Chile to the United States, which was started in 1921 and continued on a somewhat larger scale in 1922, has been noted in previous issues.

In March of this year an experimental shipment of 100 cases of grapes and 50 cases of mangoes was made from Peru to New York via the Grace Line steamer *Santa Elisa*. An American commission

merchant was instrumental in promoting this shipment, and an expert picker and packer from the Imperial Valley in California superintended the work in Peru. The fruit arrived in New York in good condition, in spite of the fact that the mangoes for lack of space were carried on deck, and when put up at auction brought good prices.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended July 1:

Steamships *Suruga*, dismantle direct-connected main air, circulating, bilge and feed pump; bore out main bearings for rocker arm; renew main rocker shaft broken at sea; fair up rocker arm and drag links; true up all plungers and pump rods; and bush glands; *Trontolite*, make general repairs to ice machine; renew 2 pipe coils in meat box; renew 12 tubes and overhaul valves of feed water heater; and overhaul 1 oil valve; *Nordfacer*, dry-dock ship for repairs to damage due to collision with barge No. 137; remove, straighten, and replace bent stem and shell plates at forepeak; remove propeller; draw tail shaft inboard for examination of stern tube; reinstall and fit spare propeller from deck of ship; renew bronze stern gland; weld lug on yoke of hand steering gear; renew 4 pintles and weld crack in rudder; clean, wire-brush, and paint ship's bottom, using paint furnished by ship.

The following vessels were at the Cristobal shops for repairs during the week ended July 3:

Steamships *Cauca*, repair division plate in condenser and renew water service valve on same; skim up piston rod; make and fit new neck bush and gland for circulating pump; repair refrigerator; repair boiler safety valves and gauges; straighten 3 furnace fronts; repair and renew part of wooden bulkhead in main bunker; repair steering chains and cargo blocks and swivel hooks; repair water taps in staterooms, etc.; *Solana*, weld dynamo eccentric strap and manufacture new one for spare; manufacture one 6-inch iron pipe with flanges for bunkering, etc.; *Salvador*, repair compressor, ballast pump suction chest lead pipe, and bunk in sailors' forecabin; renew covering boards on bridge deck and calk seams, etc.; *Empress of Australia*, machine 2 thrust shafts; machine and remetal thrust collars; clean and scale tanks as directed, etc.; *Acajutla*, repair refrigerator, compressor, and fuel heater coils; manufacture 3 hatch tarpaulins; repair 8 lifeboats and locking bar of No. 3 hatch; alter reversing lever of No. 2 starboard winch; rebush and repair gin and purchase blocks; overhaul scales, etc.; *Honduras*, manufacture 6 hatch strongbacks as directed; barge *Navahoe*, steamships *Westmoreland*, *Cristobal*, *Lewis Luckenbach*, minor repairs.

Two Employees Killed by Explosion of Oxygen Tank.

Leopold A. Johnson, American, and C. Goodman, Barbadian, were killed instantly by the explosion of a tank of oxygen which they were using in connection with a cutting torch in building No. 4, the boiler shop, of Balboa shops at approximately 8.50 a. m., June 30. Three other employees were injured (two have since returned to duty and the third is about on crutches).

All similar tanks were immediately withdrawn from service and an investigation was started to ascertain the cause of the explosion. Final report has not been made, but it is believed that the explosion resulted from back-firing due to the presence of impurities in the gas.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending July 1, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Laura C. Hall.....	Pacific Metals Transp. Co., Ltd.	June 25.....	June 26.....	4	.....
Cauca.....	Pacific Steam Navigation Co.	June 27.....	June 27.....	2	.....
Huasoo.....	Chilean Line.....	June 28.....	June 28.....	80	.....
Laura C. Hall.....	Pacific Metals Transp. Co., Ltd.	June 28.....	June 28.....	.....	57
Salvador.....	Pacific Steam Navigation Co.	June 28.....	June 29.....	5	.....
Derblay.....	U. S. Shipping Board.....	June 30.....	June 30.....	185	.....
Cuba.....	Pacific Mail Steamship Co.	June 30.....	June 30.....	22	.....
Cauca.....	Pacific Steam Navigation Co.	July 1.....	July 1.....	.....	1

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending July 1, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Dinteldyk	Holland-American Line	June 18.	June 18.	(¹)	32
Colombia	Pacific Mail Steamship Co.	June 18.	June 18.		545½
San Bruno	United Fruit Co.	June 18.	June 18.	20	129
Atenas	United Fruit Co.	June 18.	June 19.	(¹)	116
Colon	Panama Railroad Steamship Line.	June 19.	June 19.		3,119
Renairo	Chilean Line	June 19.	June 19.	2	(²)
Manavi	Pacific Steam Navigation Co.	June 19.	June 22.		351
Perou	French Line	June 19.	June 23.	46	413
Heredia	United Fruit Co.	June 20.	June 22.	606	280
Crynssen	Royal Netherlands W. I. Mail.	June 20.	June 21.	40	(²)
Tolba	United Fruit Co.	June 20.	June 21.	544	25
Asian	Leyland Line	June 20.	June 21.	561	
San Gil	United Fruit Co.	June 21.	June 21.	17	51
Sarpfos	Caribbean Steamship Line.	June 22.	June 22.	340	
Adalia	Hamburg-American Line.	June 21.	June 22.	(¹)	75
Atenas	United Fruit Co.	June 22.	June 22.	3	65
Crynssen	Royal Netherlands W. I. Mail.	June 23.	June 24.	14	2,505
Mantaro	Peruvian Line.	June 23.	June 23.	1,845	
Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	June 24.	June 24.	1,553	
Bayano	Elders & Fyffes, Ltd.	June 24.	June 24.	30	1
Essequibo	Pacific Steam Navigation Co.	June 25.	June 26.	2	32
Ebro	Pacific Steam Navigation Co.	June 25.	June 26.	238	(²)
Santa Ana	Pacific Mail Steamship Co.	June 25.	June 26.	313	204
Abangarez	United Fruit Co.	June 25.	June 26.	(¹)	143
Rhodophis	Kosmos Line.	June 26.	June 26.	(¹)	82
Advance	Panama Railroad Steamship Line.	June 25.	June 28.	417	(¹)
Eemdiik	Holland-American Line.	June 26.	June 28.	70	408
Laura C. Hall	Pacific Metals Corp.	June 26.	June 28.	61	5
Parismina	United Fruit Co.	June 26.	June 29.	619	92
Cauca	Pacific Steam Navigation Co.	June 27.	July 1.	1,290	1,368
Saint Andre	French Line.	June 27.	June 28.	47	(²)
Calamares	United Fruit Co.	June 27.	June 28.	216	44
Mantaro	Peruvian Line.	June 28.	June 28.		292
Tivives	United Fruit Co.	June 28.	June 29.	43½	5
Metapan	United Fruit Co.	June 28.	June 29.	66	157
Huasco	Chilean Line.	June 28.	June 29.	265	
Caledonia	N. O. & S. A. S. S. Line.	June 28.	June 29.	367½	(²)
Salvador	Pacific Steam Navigation Co.	June 29.	June 29.	682	
Abangarez	United Fruit Co.	June 29.	June 29.	10	49
Nitonian	Leyland Line	June 29.	June 29.	475	
Acajutla	Pacific Steam Navigation Co.	June 30.	June 30.	530	
Honduras	French Line	June 30.	June 30.	1	
Cristobal	Panama Railroad Steamship Line.	June 30.	June 30.	9,594	
Cuba	Pacific Mail Steamship Co.	June 30.	June 30.	346½	
Asian	Leyland Line	June 30.	June 30.		498
Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	July 1.	July 1.		2,165

* No cargo discharged.

* No cargo laded.

Notaries Public in the Canal Zone.

The following is a list of the notaries public commissioned in the Canal Zone as of June 14, 1922. The list gives the name, where stationed, and the date of expiration of commission:

BALBOA.

Adams, R. H., Balboa shops, August 18, 1922.
 Dryden, Geo. A., Balboa storehouse, October 8, 1923.
 Hyde, W. H., Port Captain's office, March 31, 1923.
 Kalar, J. D., Port Captain's office, April 15, 1923.

BALBOA HEIGHTS.

Attaway, E. F., Administration Building, room 272, October 28, 1924.
 Buchler, Geo. H., Administration Building, room 201, April 19, 1924.
 Hammer, H. H., Administration Building, room 262, March 31, 1923.
 Igen, W. F., station agent, December 3, 1922.
 Ilwitzer, P. G., Purchase and Sales Bureau, Administration Building, room 268, October 11, 1923.

Murray, P. E., Administration Building, room 112, June 25, 1923.
 Pender, W. I., Administration Building, room 237, July 30, 1922.
 Singleton, C. C., district quartermaster's, April 26, 1922.
 Sims, Walter H., Quarry Heights, December 1, 1924.
 Taylor, R. G., Administration Building, room 343, April 19, 1924.
 Wang, Frank H., Administration Building, room 303, April 30, 1923.
 Walker, J. J., Administration Building, room 237, July 27, 1924.
 Williams, H. E., Administration Building, room 208, January 10, 1924.

ANCON.

Boyd, Oscar S., Municipal Division, July 30, 1922.

Erwin, Wm. G., Land Agent's office, December 30, 1924.
 Lefever, John E., Land Agent's office, February 28, 1925.
 LeMire, George, post office, April 30, 1923.
 Sheibley, F. H., District Court, November 1, 1923.

COROZAL.

Gill, Joseph H., Armament office, December 10, 1922.
 Malone, P. L., station agent, April 12, 1924.

PARAISO.

Rattiner, W. H., Dredging Division, February 18, 1924.

PEDRO MIGUEL.

R. N. Norris, Municipal Division, June 30, 1924.
 Oliver, Rev. E. M., minister, April 30, 1923.

SUMMIT.

Wood, A. C., station agent, December 3, 1922.

GAMBOA.

Freehan, P. A., station agent, December 3, 1922.

GATUN.

Daniels, W. L., locks, March 25, 1924.
 DeLange, W., Electrical Division, December 12, 1922.
 Ford, Stanley R., district quartermaster, August 19, 1923.

Hanrahan, T. J., railroad station, December 3, 1922.
 Scarborough, W. W., clubhouse, August 19, 1923.

CRISTOBAL.

Campbell, J. S., Assistant District Court Clerk, January 29, 1923.
 Coffey, D. A., Receiving and Forwarding Agency, December 17, 1922.
 Collins, E. G., railroad station (Colon), December 3, 1922.
 Earle, L. H., American Foreign Banking Corporation, January 9, 1924.
 Flood, Arthur, Customs office, November 15, 1922.
 Halpin, Max H., Port Captain's office, July 12, 1924.
 Hughes, P. L., coaling plant, February 14, 1925.
 Livengood, J. F., Commissary Division, May 17, 1925.
 MacSparren, E. S., Receiving and Forwarding Agency, December 1, 1924.
 Mitchell, J. A., Customs office, March 31, 1925.
 Page, Courtney K., American Foreign Banking Corporation, August 24, 1924.
 Rabbitt, D. F., Commissary Division, October 11, 1923.
 Stone, W. H., Mechanical Division, September 4, 1922.
 Thornton, H. O., Receiving and Forwarding Agency, December 3, 1922.
 Weaver, H. D., Port Captain's office, May 11, 1922.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered as fast as the ships can take it, from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

Official Circular.

Services Out of Norfolk.

PANAMA RAILROAD COMPANY,
 PANAMA RAILROAD STEAMSHIP LINE,
 BALBOA HEIGHTS, C. Z., June 27, 1922.

To all concerned—Supplementing circular from this office, dated May 20, announcing passenger service by the steamship *Cristobal* between Cristobal and Norfolk, we wish to inform the public that in addition to the railroad service and steamship service mentioned in our former circular, the Old Dominion Line has a service between Norfolk and New York.

S. W. HEALD,
 Superintendent.

Shipping Commissioner's Sale.

The Shipping Commissioner, room 305, Administration Building, Balboa Heights, will accept written bids up to noon Monday, July 10, 1922, for the purchase of certain personal property belonging to the estate of Archie M. Keegan, deceased American seaman, and consisting of a suitcase, wearing apparel, and miscellaneous personal effects.

Persons desiring to examine the property may apply to the Commissioner's Office, on any business day, where they may obtain detailed lists of the effects on which to prepare bids. Copies of such lists will also be found posted at each of the clubhouses and post offices in the Canal Zone and in the offices of the Deputy Shipping Commissioners at Balboa and Cristobal.

Bids may be made for the entire lot of effects or for individual articles, and should be submitted

in sealed envelopes addressed to the Shipping Commissioner, and marked "Bid on Effects of Archie M. Keegan, deceased." No advance deposit of money is required with bids, and the right is reserved to reject any or all bids.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton; but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;

(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars to those receiving THE PANAMA CANAL RECORD. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Trips Through the Canal.

The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Mail Steamship Company, Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Indian Line). The Pacific Mail charges \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 589.

PORT OF CRISTOBAL—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
June 28.	Metapan.	United Fruit Co.	New York via Kingston.	June 28.	Tivives.	United Fruit Co.	New York via Kingston.
June 28.	All-America.	All-America Cable Co.	Port Limon.	June 29.	Metapan.	United Fruit Co.	New York via waypoints.
June 28.	Caledonia.	Svenska Lloyd.	New Orleans via waypoints.	June 29.	Abangarez.	United Fruit Co.	New Orleans.
June 29.	Abangarez.	United Fruit Co.	Bocas del Toro.	June 29.	All-America.	All-America Cable Co.	High seas.
June 29.	Nitonian.	Panama Railroad Steamship Line.	Liverpool via waypoints.	June 29.	Caledonia.	Svenska Lloyd.	Clienteros.
June 29.	Cristobal.		Norfolk.	June 30.	San Juan.	Buenfield's Fruit Co.	Bluefields.
June 30.				June 30.	Asian.	Leyland Line.	New Orleans.
PORT OF BALBOA.				Tug.			
Cable ship.							
June 25.	Guarda Costas No. 3.	Colombian Government.	Buenaventura.	June 27.	Adour.	K. Salvasen.	Talara.
June 27.	Adour.	K. Salvasen.	San Francisco.	June 27.	Rosana.	Alberto Fuit.	Punta Arenas.
June 29.	Romulus.	A. O. Lindvig.	Talara.	July 1.	Romulus.	A. O. Lindvig.	Tacoma.
June 30.	Derblay.	U. S. Shipping Board.	Valparaiso.	July 1.	Derblay.	U. S. Shipping Board.	San Francisco.
June 30.	Hwah Ping.	Chinese Government.	Iquique.				

*Other than ships passing through the Canal.

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UNIVERSITY OF MARYLAND
AUG 2 1922

THE PANAMA CANAL RECORD



OFFICIAL PUBLICATION OF THE PANAMA CANAL.
PUBLISHED WEEKLY.

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The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office
at Cristobal, C. Z., under the Act of March 3, 1879.

Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical
information and is required for the proper transaction of the public business.

Volume XV. Balboa Heights, C. Z., July 12, 1922. No. 48.

Commercial Traffic Through the Panama Canal in June, 1922, by Trade Routes.

ATLANTIC TO PACIFIC.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>United States coastwise:</i>							
United States	34	125,396	161,981	197,879	126,012	\$156,172 74	Long tons. 181,651
<i>From east coast of United States to Far East:</i>							
British	6	27,295	32,820	41,184	26,560	33,782 70	42,631
Norwegian	5	17,676	24,160	28,639	17,727	22,095 00	38,456
Japanese	4	17,376	18,663	24,344	17,104	21,353 10	27,675
United States	3	12,422	16,013	19,597	15,527 50	25,047	25,047
Italian	1	4,025	4,049	5,400	3,319	4,858 80	7,154
Totals	19	78,794	95,705	119,164	77,049	97,617 10	140,963
<i>From east coast of United States to west coast of South America:</i>							
United States	9	37,076	42,336	56,321	36,368	37,390 44	22,833
British	2	6,218	7,941	10,944	6,612	7,772 50	3,057
Danish	2	4,813	5,591	6,498	4,040	5,950 75	8,078
Swedish	1	1,349	1,458	2,316	1,630	1,686 25	2,168
Totals	14	49,456	57,326	76,079	48,650	52,799 94	36,136
<i>From Europe to west coast of South America:</i>							
British	7	24,374	32,542	39,320	24,450	30,467 50	20,294
German	2	5,528	6,886	8,926	5,562	6,910 00	9,029
United States	1	3,751	4,503	6,263	3,738	4,688 75	7,132
French	1	3,600	4,146	5,765	3,681	4,500 00	474
Danish	1	3,268	5,338	5,259	3,301	4,085 00	5,334
Chilean	1	2,754	3,442	5,961	2,981	3,442 50	2,672
Dutch	1	2,290	3,660	3,689	2,291	2,862 50	3,028
Totals	14	45,565	60,517	75,183	46,004	56,956 25	47,963
<i>From Cristobal to west coast of South America:</i>							
British	4	1,325	1,720	2,391	1,465	1,656 25	568
Peruvian	3	4,225	8,206	13,764	7,190	5,281 35	1,163
United States	1	1,418	2,113	2,458	1,481	1,772 50	80
Chilean	1	1,275	2,156	2,729	1,633	1,593 75	1,016
Totals	9	8,243	14,285	21,342	11,769	10,303 75	2,827
<i>From Europe to Australasia:</i>							
British	7	36,799	44,934	57,759	37,215	45,920 00	29,357
<i>From east coast of United States to Australasia:</i>							
British	6	25,811	33,204	40,013	26,082	32,077 35	32,884
United States	1	4,335	4,321	5,716	4,271	5,185 20	4,293
Totals	7	30,146	37,525	45,729	30,353	37,262 55	37,177
<i>From Europe to west coast of Can- ada:</i>							
British	2	8,067	11,802	12,875	8,158	10,083 75	12,569
Dutch	2	7,656	9,427	11,990	7,560	9,570 00	9,338
French	1	4,879	4,959	6,674	4,230	5,950 80	1,902
Totals	5	20,602	26,188	31,539	19,948	25,604 55	22,809
<i>From Europe to west coast of United States:</i>							
British	4	20,508	22,745	29,318	20,994	16,559 19	8,404
Swedish	1	3,129	5,122	6,293	4,046	3,911 25	8,404
Totals	5	23,637	27,867	35,611	25,040	20,470 44	8,404

ATLANTIC TO PACIFIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From east coast of Mexico to west coast of South America:</i>							<i>Long tons.</i>
British.....	2	9,423	10,501	15,767	9,121	\$11,778.75	20,388
United States.....	1	4,203	5,041	6,703	4,203	5,253.75	9,500
French.....	1	2,155	2,096	2,953	1,880	2,515.20	3,000
Totals.....	4	15,781	17,638	25,423	15,204	19,547.70	32,888
<i>From east coast of United States to Balboa, C. Z.:</i>							
United States.....	2	5,287	6,187	8,864	5,232	6,608.75	6,363
<i>From east coast of United States to west coast of Mexico:</i>							
Spanish.....	1	3,031	3,437	4,648	2,877	2,503.44	40
Mexican.....	1	786	952	1,462	892	685.44	.....
Totals.....	2	3,817	4,389	6,110	3,769	3,188.88	40
<i>Colombian coastwise:</i>							
United States.....	1	1,418	2,113	2,458	1,481	1,772.50	64
British.....	1	614	622	1,138	602	746.40	606
Totals.....	2	2,032	2,735	3,596	2,083	2,518.90	670
<i>From Cristobal to west coast of Central America:</i>							
British.....	2	1,495	1,724	2,618	1,544	1,868.75	1,497
<i>From east coast of Mexico to Balboa, C. Z.:</i>							
British.....	1	4,645	5,311	7,270	4,513	5,806.25	9,600
<i>From east coast of Canada to west coast of South America:</i>							
British.....	1	5,166	6,096	8,461	5,960	4,389.12	.....
<i>From east coast of South America to west coast of United States:</i>							
United States.....	1	4,308	5,054	5,579	4,172	5,385.00	5,300
<i>From east coast of South America to Far East:</i>							
Japanese.....	1	3,590	4,101	5,760	3,548	4,487.50	5,064
<i>From West Indies to west coast of Canada:</i>							
British.....	1	3,571	4,143	5,443	3,363	4,463.75	7,338
<i>From east coast of Canada to Australasia:</i>							
British.....	1	3,245	4,092	5,389	3,333	4,056.25	2,500
<i>From east coast of United States to west coast of Canada:</i>							
United States.....	1	2,866	4,225	4,621	2,866	3,582.50	5,500
<i>From Cristobal to west coast of United States:</i>							
United States.....	1	1,654	2,163	2,643	1,654	2,067.50	1,330
<i>Local, Cristobal to Balboa:</i>							
United States.....	1	10	10	10	10	12.00	.....
						71.19	.....
Totals, June, 1922.....	135	476,105	594,196	752,082	479,291	571,161.36	586,377
Totals, May, 1922.....	134	472,852	594,713	742,419	467,705	578,433.82	673,398
Totals, June, 1921.....	103	336,515	415,302	520,884	331,420	416,543.07	359,584

¹ Under collection for February, 1922. British steamship *Gothic Star*.

PACIFIC TO ATLANTIC.

<i>United States coastwise:</i>							<i>Long tons.</i>
United States.....	25	92,557	121,156	147,605	91,916	\$113,554.60	113,692
<i>From west coast of South America to east coast of United States:</i>							
British.....	5	16,544	19,470	26,106	16,698	20,651.05	24,471
United States.....	5	14,427	17,459	22,681	14,939	17,871.95	23,788
Norwegian.....	2	6,112	6,698	8,534	6,107	7,364.05	11,272
Totals.....	12	37,083	43,627	57,321	37,744	45,887.05	59,531

PACIFIC TO ATLANTIC—Continued.

Route and registry.	No. of vessels.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered gross.	Registered net.		
<i>From west coast of South America to Cristobal, C. Z.:</i>							<i>Long tons.</i>
British.....	4	1,325	1,720	2,391	1,465	\$1,656.25	1,233
Peruvian.....	3	4,225	8,296	13,764	7,190	5,281.25	4,434
Chilean.....	2	3,086	5,338	6,527	3,905	3,857.50	782
United States.....	2	2,836	4,226	4,916	2,962	3,545.00	1,895
Totals.....	11	11,472	19,580	27,598	15,522	14,340.00	8,344
<i>From west coast of South America to Europe:</i>							
British.....	3	12,964	14,064	18,262	11,036	15,972.55	15,369
Dutch.....	2	4,399	7,452	7,107	4,396	5,498.75	7,627
German.....	1	4,446	5,154	7,056	4,493	5,557.50	4,628
Danish.....	1	4,257	5,341	6,650	4,247	5,321.25	4,570
Italian.....	1	2,718	3,773	4,680	2,850	3,397.50	400
Totals.....	8	28,784	35,784	43,755	27,022	35,747.55	32,594
<i>From west coast of Canada to Europe:</i>							
Dutch.....	2	10,626	13,619	17,050	10,610	13,295.00	18,529
French.....	2	7,957	8,529	11,721	7,455	9,774.35	12,161
British.....	1	5,297	6,334	8,401	5,341	6,621.25	10,737
United States.....	1	3,465	5,454	5,718	3,472	4,331.25	8,208
Danish.....	1	3,244	4,016	5,219	3,337	4,055.00	5,944
Totals.....	7	30,599	37,952	48,109	30,215	38,076.85	55,579
<i>From west coast of United States to Europe:</i>							
United States.....	3	14,107	17,830	20,209	12,411	17,633.75	28,499
British.....	3	9,496	11,973	14,880	9,560	11,870.00	21,042
Totals.....	6	23,603	29,803	35,089	21,971	29,503.75	49,541
<i>From west coast of Canada to United States:</i>							
United States.....	4	18,974	23,481	28,296	18,954	23,717.50	31,208
<i>From Far East to east coast of United States:</i>							
Japanese.....	3	13,762	16,857	21,813	13,486	17,202.50	19,936
<i>From west coast of Central America to Cristobal:</i>							
British.....	3	2,133	2,430	3,788	2,198	2,666.25	2,238
<i>From west coast of South America to east coast of Mexico:</i>							
British.....	2	9,690	10,990	15,700	9,348	7,912.80	.....
<i>From west coast of United States to Cristobal:</i>							
United States.....	2	3,516	4,369	5,812	3,516	4,395.00	1,629
<i>From Australasia to Europe:</i>							
British.....	1	5,544	6,581	8,734	5,543	6,930.00	5,440
<i>From Balboa, C. Z., to east coast of Mexico:</i>							
British.....	1	4,645	5,311	7,270	4,513	3,823.92	.....
<i>From Balboa, C. Z., to east coast of United States:</i>							
United States.....	1	4,456	5,312	7,045	4,352	3,824.64	.....
<i>From west coast of United States to east coast of South America:</i>							
United States.....	1	3,537	4,901	5,657	3,536	4,421.25	2,454
<i>From Australasia to east coast of United States:</i>							
British.....	1	2,872	3,401	4,665	2,892	3,590.00	4,500
<i>From west coast of Central America to east coast of United States:</i>							
Norwegian.....	1	1,845	2,113	2,735	1,721	2,306.25	2,129
<i>From west coast of Central America to Europe:</i>							
German.....	1	1,124	1,320	1,928	1,136	1,405.00	2,120
<i>Colombian coastwise:</i>							
British.....	1	614	622	1,138	602	746.40	106
<i>Local, Balboa to Cristobal:</i>							
United States.....	1	831	875	1,819	880	1,038.75	.....
Panaman.....	1	52	52	79	52	39.00	.....
Totals.....	2	883	927	1,898	932	1,077.75	.....
Totals, June, 1922.....	93	297,693	376,517	475,956	297,119	361,129.06	391,161
Totals, May, 1922.....	109	355,831	438,103	555,134	354,585	436,623.55	485,109
Totals, June, 1921.....	89	277,379	346,175	439,973	279,071	335,421.05	335,136

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, July 8, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.		Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.			
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.			Tons.	Gross.					Net.					
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Atl. Gulf & Pacific Co. (S. B.).	376	0	52	0	25	5	Portland	General	5,242	5,142	3,568
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	South American Steamship Co.	380	0	44	0	25	5	Valparaiso	General	410	4,552	3,182
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Nippon Yusen Kaisha	404	0	52	0	24	0	Shanghai	General	5,040	5,785	4,101
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Pacific Mail Steamship Co.	307	8	42	0	20	10	San Francisco	General	1,356	3,429	2,205
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	U. S. Army	395	0	55	0	21	3	San Francisco	Army stores.	9,000		
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Island Steamship Line	424	2	56	2	27	0	Kobe	General.	8,047	7,611	5,450
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	North American Steamship Co	251	0	43	0	22	10	Valparaiso	Coke, coal, gen.	2,980	2,444	1,571
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Osaka Shosen Kaisha	467	3	50	0	26	10	Singapore	General, steel	6,768	6,234	4,496
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Imperial Oil Co.	463	3	60	2	17	0	Talara	Ballast.	8,401	6,096	
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Imperial Oil Co.	199	6	32	0	14	6	Talara	Gasoline	907	873	386
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Luckenbach Line	446	5	56	1	25	0	Los Angeles	General	4,890	8,785	6,567
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Vimnen Gebruden	311	0	45	0	15	3	Punarenas	General	770	3,411	2,496
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Pacific Steam Navigation Co.	215	0	33	5	14	5	Guayaquil	General	416	1,213	692
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	W. Wilhelmssen	400	0	52	0	24	0	San Antonio	Coke	5,178	5,639	4,166
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Crowell & Thurlow	394	1	55	1	23	0	Seattle	General.	5,915	7,047	4,998
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Canadian Pacific Railway	589	0	75	0	27	7	Vancouver.	Ballast.	7,957	7,285	5,256
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	U. S. Steel Products Co.	395	5	55	0	27	0	Kobe.	Cotton, steel			
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	N. Atl. & Pac. S. S. Co. (S. B.)	560	4	62	3	27	0	Los Angeles	Ballast	15,041	9,704	
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	China Mutual Steam Nav. Co.	480	6	58	3	29	10	Yokohama	General	9,010	9,408	6,709
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	U. S. Navy.	402	0	53	0	22	0	San Francisco	Provisions	3,500		
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Standard Oil Co.	500	0	68	2	23	0	San Francisco	Ballast	11,224	7,849	
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	New Zealand Shipping Co.	460	7	60	2	29	4	Auckland	General	5,918	9,967	6,936
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Royal Netherlands W. I. Mail.	363	0	48	0	13	10	Amsterdam	General	1,430	4,167	3,083
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Pacific Mail Steamship Co.	380	0	48	7	23	0	San Francisco	General	3,000	6,033	4,353
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Southern Shipping Co.	244	0	38	0	20	0	Shanghai.	General	2,624	1,658	1,492
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Moore & McCormack Co. (S. B.)	406	7	55	2	26	6	New Orleans	General	7,000	6,240	4,434
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	California & Oregon Lumber Co.	253	4	43	6	20	6	Seattle	General	2,370	2,765	1,733
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Peruvian Line	374	0	46	0	18	3	Baltimore.	General	245	4,466	2,405
Car. Remy.	5	05	5	20	5	13	42	2	14	American.	Standard Oil Co.	440	0	58	0	21	0	Callao.	General	3,253	8,912	6,254
Car. Remy.	5	05	5	20	5	13	42	2	14	American.							San Francisco	General and oil.				

3 Bark.

2 U. S. Navy supply ship.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

1 U. S. Army transport.

Ship	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.		Beam.	water draft.	From—	For—	Cargo.		Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.			Beam.	water draft.					Nature.	Tons.	Gross.	Net.	
Lombardia	1	20	2	9	2	16	2	18	Swedish	Svenska Lloyd	271	2	41	6	19	0	Talcahuano	Nitrate.	2,708	2,359	1,390
Ionio	2	11	3	6	3	13	3	13	British	White Star Line	500	3	63	3	26	8	Wellington.	General	5,000	12,872	9,577
Kennecott	2	12	3	8	3	15	2	17	American	Alaska Steamship Co.	345	3	49	6	22	6	Seattle	General, lumber	4,588	4,594	3,381

Salma City.	2 14 05	3 8 12	3 15 27	3 23 35	3 23 35	U. S. Steel Products Co.	425 0	56 0	22 0	Seattle	New York	General, lumber	5,756	7,611	5,450
Ucayali	2 20 00	3 8 37	3 16 34	3 18 15	3 18 15	Peruvian	335 0	42 0	20 0	Callao	Cristobal	General	1,681	4,466	2,405
Pear Branch	3 1 00	3 9 17	3 18 15	3 22 48	3 22 48	F. & W. Wilson	412 0	53 5	21 3	Valparaiso	Bilbao	General	5,441	5,760	3,866
Santa Teresa	3 7 00	3 10 07	3 16 35	3 20 47	3 20 47	Grace Line	360 2	51 0	24 6	Talcahuano	New York	(5)	4,120	5,725	4,086
Grestone	3 5 15	3 10 29	3 18 47	3 22 09	3 22 09	Gould Shipping	379 7	51 0	21 6	Sydney	United King	Copra	5,027	5,289	3,948
Toco	3 10 35	3 12 00	3 19 40	3 24 07	3 24 07	Sherridan Steamship Corp.	440 0	55 0	19 0	Toopilla	Tampico	Ballast	7,963	9,421	8,821
Aden Maru	3 20 00	3 7 52	3 15 09	3 15 09	3 15 09	Kokusai Kisen	385 0	55 0	26 0	Portland	United King	Wheat	7,513	5,914	4,400
Glasgow Maru	4 23 00	5 7 53	5 15 30	5 16 37	5 16 37	Kokusai Kisen	385 0	51 0	25 6	Seattle	Europe	Wheat	7,551	5,919	4,389
Agawstar	5 4 00	5 8 02	5 16 50	5 17 45	5 17 45	New York & Cuban Steamship Co.	370 0	53 1	22 6	Raymond	New York	Lumber	5,520	5,523	4,203
Cardiganshire	5 4 30	5 9 42	5 17 45	5 18 45	5 18 45	Royal Mail Steam Packet Co.	500 0	62 4	28 0	Vancouver	Immingham	(6)	18,810	11,410	8,385
Almagro	5 15 35	6 7 11	6 14 45	7 1 55	7 1 55	McAndrews & Co.	303 4	43 0	14 6	Guayaquil	New York	General	628	2,878	1,714
Blue Triangle	5 18 00	6 8 05	6 16 50	7 3 15	7 3 15	U. S. Shipping Board	390 0	54 2	22 0	Seattle	New York	(7)	4,340	4,209	4,317
Eastern Planet	6 3 00	6 9 33	6 16 55	6 20 50	6 20 50	U. S. Shipping Board	384 8	51 2	22 0	Melbourne	Boston	(8)	4,957	6,235	4,480
Benjamin	5 22 30	6 10 27	6 18 00	6 18 00	6 18 00	Standard Oil Co.	411 6	53 2	27 0	Talara	New York	Oil	8,132	6,177	4,244
Brewster	6 0 30	6 12 43	6 20 00	6 22 10	6 22 10	Anglo-Saxon Petroleum Co.	412 0	53 3	25 6	San Francisco	London	Oil	7,297	6,331	4,422
Petricola	6 0 30	7 9 04	7 14 32	7 15 30	7 15 30	Anglo-Saxon Petroleum Co.	400 0	52 3	26 6	Bahoa	Rotterdam	Oil	7,600	6,021	4,180
Crenatula	6 8 30	7 9 04	7 14 32	7 15 30	7 15 30	B. Scott	23 0	4 0	2 2	Bahoa	Gamboa	Oil	1	1	1
Mary A. L. Kont.	7 1 45	7 5 58	7 15 14	7 15 14	7 15 14	Crowell & Thurlow	394 0	55 1	25 6	Portland	Boston	Lumber, general	6,500	7,047	5,030
Aysen	8 1 00	8 7 48	8 14 38	8 14 38	8 14 38	Chilean Line	379 6	44 3	18 6	Talcahuano	Cristobal	General	147	4,335	3,068
Orcoma	7 20 40	8 12 26	8 18 54	8 22 57	8 22 57	Pacific Steam Navigation Co.	511 6	62 0	26 1	Coronel	Liverpool	General	3,303	12,266	7,942
Koyo Maru	8 13 15	8 14 10	8 21 34	8 21 34	8 21 34	Toyo Kisen Kaisha	400 0	53 0	28 0	Iloilo	New York	Sugar	7,100	6,233	4,398
La Paz	8 6 00	8 14 25	8 22 55	9 20 35	9 20 35	Pacific Steam Navigation Co.	406 0	54 2	25 0	Talcahuano	Hamburg	General	7,071	7,216	4,912

* Commercial launch.

* Nitrate, ores, specie, and general.

* Grain, canned goods, and general.

* General and lumber.

* Chrome, ores, wood, and general.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 2	Turrialba	United Fruit Co.	New Orleans via Habana.	July 1	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.
July 2	San Benito	United Fruit Co.	Boston via Port Limon.	July 2	San Benito	United Fruit Co.	Boston.
July 3	Panama	Panama Railroad Steamship Line.	New York via Haiti.	July 3	Turrialba	Hamburg-American Line	Bocas del Toro.
July 3	Cartago	United Fruit Co.	New Orleans.	July 3	Adala	Royal Netherlands W. I. Mail.	Cartagena.
July 3	Adala	Hamburg-American Line.	Puerto Barrios.	July 5	Oranie Nassau	United Fruit Co.	Port Limon.
July 4	Camden	United Fruit Co.	Tampico.	July 5	Pastores	United Fruit Co.	New York via wayports.
July 4	Oranie Nassau	Royal Netherlands W. I. Mail.	Amsterdam via wayports.	July 5	Camden	United Fruit Co.	Tampico.
July 4	Pastores	United Fruit Co.	New York via Habana.	July 6	Cartago	United Fruit Co.	New Orleans via wayports.
July 4	San Blas	French Line.	St. Nazaire and wayports.	July 6	Turrialba	Panama Railroad Steamship Line.	New Orleans.
July 5	Turrialba	United Fruit Co.	Boston via Habana.	July 6	Cristobal	French Line.	Norfolk.
July 5	San Blas	United Fruit Co.	Bocas del Toro.	July 6	Haiti	Puerto Colombia.	Boston via Port Limon.
July 6	El Paso	Southern Pacific Line.	Galveston.	July 6	San Blas	Elders & Fyffes, Ltd.	Kingston.
July 6	John Worthington	Standard Oil Co.	Puerto Lobos.	July 8	Coronado	Southern Pacific Line.	New York.
July 7	Oranie Nassau	Royal Netherlands W. I. Mail.	Port Limon.	July 8	Nitonian	Leysland Line.	New Orleans via Kingston.
July 7	H. M. S. Wistaria	British Government	Puerto Colombia.	July 8	John Worthington	Standard Oil Co.	Tampico.
July 8	Coronado	Elders & Fyffes, Ltd.	Port Limon.				

PORT OF BALBOA.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 2				July 2	Hwah Ping.	Chinese Government.	Hongkong.

* Other than ships passing through the Canal.

Passage of the "Empress of Australia."

The steamer *Empress of Australia*, owned by the Canadian Pacific Railway, which arrived at the Canal on July 1 from Hamburg and made the transit on July 6, after receiving repairs at the Cristobal shops, was conspicuous in Canal waters on account of her size, and is one of the largest ships to have made the transit. She is 590 feet long by 75 feet in beam, and her gross and net tonnage, Panama Canal measurement, are 21,861 and 14,150 tons, respectively; her registered gross and net are 21,477 and 11,737 tons, respectively. Her tonnage and length are less than those of the *America*, which made the transit on February 6, 1920; the registered gross of the *America* is 22,622 tons, and her length is 668 feet 9 inches.

The *Empress of Australia* was built in Germany as the *Tirpitz*, and is on her way to enter the trans-Pacific service of the Canadian Pacific. Her passage through the Canal was made in ballast.

Notice to Mariners.—Light Established, Flamenco Island, Balboa Harbor.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 5, 1922.

CIRCULAR No. 643-100:

1. The white flashing light referred to in Circular No. 643-99, dated June 8, 1922, was established on July 1, 1922, on the S. W. side of Flamenco Island. Illuminant, electricity. Position, latitude 8° 54' 35" North, longitude 79° 31' 23" West.

2. Focal plane 160 feet, visible 20 miles, exhibited from square concrete pedestal, surmounted by lantern, painted white. Color of light, white, with red sector. Characteristic, 0.5 second light, 1.0 second dark; 2.0 seconds light, 1.5 seconds dark (one group of two flashes every 5 seconds). Showing white from 110° to 185°. Red sector from 185° to 283°. Owing to the background the light will not be visible from 283° to 110° through North.

(C. and G. Charts Nos. 952 and 953. H. O. Charts Nos. 1019, 1176, and 5001. H. O. Publication No. 30.)

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 6, 1922.

Master Oliver of steamship *Blue Triangle* at 11.35 a. m., July 5, Lat. 7° 55' N., Long. 79° 42' W., passed a large tree, 45' long, 2½' diameter, waterlogged and just awash. Very dangerous to navigation.

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 6, 1922.

The master of the steamship *Haiti* reports touching bottom at 1.5 to 3 fathoms where chart shows 16 to 20 fathoms. Approximate position, Lat. 10° 50' 54" North, Long. 64° 4' 10" West. Point Carnero bears North 69° East, true, Las Tetass, west peak, North 31° West, Point Mangles, North 4° East.

JAY J. MORROW,
Governor.

Postal and Cable Addresses of The Panama Canal.

The postal address is "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Balboa for Week Ending July 8, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Cuba.....	Pacific Mail Steamship Co.....	July 3.....	July 3.....		1
Salvador.....	Pacific Steam Navigation Co.....	July 6.....	July 6.....		5
Orestes.....	Royal Netherlands W. I. Mail.....	July 7.....	July 7.....	20	
Venezuela.....	Pacific Mail Steamship Co.....	July 8.....	July 8.....		2

Ships at Canal Repair Shops.

The following vessels were at the Cristobal shops for repairs during the week ended July 10:

Steamships *Toco*, calk leaky rivets; expand all tubes and test cargo oil heaters, scale boilers; replace handrails at stern as directed, etc.; *Orestes*, repair compressor piston rod for ice machine; *H. M. Storey*, remove cleats and stud bolts from after tonnage hatch; *Panama*, install 4 locking bars on cargo lockers; repair hose reel and pipe covering over filler line in No. 2 hold; *Blue Triangle*, make valve stem for steering engine and 2 for ice machine; bore out ice machine valve guide brass and make new pin for same; schooner *Arabia*, make 1 new exhaust valve cage; steamship *Heredia*, bore out bushings as directed; launch *Conroy*, manufacture miscellaneous parts for magneto, etc.

Deceased Employees.

The estates of the following deceased employees of The Panama Canal or The Panama Railroad Company are now in process of settlement, and any claims against these estates, or any information which might lead to the location of heirs, or to the recovery of property, bank deposits, postal savings or postal money order deposits, or any other moneys due them, should be presented at the office of the Administrator of Estates at once in order that the estate may be settled as soon as possible. All claims should be itemized, sworn to before a notary public, or other public officer having a seal, and submitted in duplicate. These names will be published but once.

Name.	Check No.	Native of—	Isthmian residence.	Employed by—	Date of death.
Leopold A. Johnson...	6885	United States...	Balboa.....	Mechanical Division...	June 30, 1922.
Emilio Maitin <i>alias</i> Maiten.....	22465	Panama.....	Panama.....	Panama Railroad.....	May 28, 1922.
Bueba Henry, <i>alias</i> Henry Brabdoin....	45288	Martinique....	Panama.....	Health Department...	June 18, 1922.

Coal Prices.

Inquiries received indicate that not all of the users of the Canal have ample information as to the prices of coal at the Canal.

The prices, under various conditions of delivery, are published from time to time in THE PANAMA CANAL RECORD and form a part of the Tariff, with supplements, all of which are distributed to steamship operators regularly and without charge. Files of these publications may be consulted in the offices of American Consular officers, who are in position to supply all other essential information about the Panama Canal.

The Panama Canal, acting through its affiliate, the Panama Railroad Company, is the only organization selling coal to ships at the Canal. Its quotations, accordingly, are the lowest prices and the only prices unless it should happen that contractors are quoting for sales at the Canal, notwithstanding that all deliveries are made through the Canal plants at the published tariff rates.

The following is a summary of the present prices on coal:

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered

from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton, but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

- (a) To vessels taking 1,200 tons or over;
- (b) To vessels taking between 825 and 1,200 tons and bunkering full;
- (c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

In case of change of prices, the new rates are published in the Tariff and in THE PANAMA CANAL RECORD, and as far as possible advance notice is given to the steamship agents on the Isthmus and to the press.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered as fast as the ships can take it, from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Official Circulars.

Act of Congress.—Injury Compensation.

THE PANAMA CANAL,
EXECUTIVE OFFICE.

BALBOA HEIGHTS, C. Z., July 5, 1922.

CIRCULAR NO. 600-24:

The Act of Congress quoted below is published for the information of all concerned.

JAY J. MORROW,
Governor.

AN ACT To amend an Act entitled "An Act to provide compensation for employees of the United States suffering injuries while in the performance of their duties, and for other purposes," approved September 7, 1916.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act entitled "An Act to provide compensation for employees of the United States suffering injuries while in the per-

formance of their duties, and for other purposes," approved September 7, 1916, be amended as follows:

"SEC. 20. That all original claims for compensation for disability shall be made within sixty days after the injury. All original claims for compensation for death shall be made within one year after the death. For any reasonable cause shown the commission may allow original claims for compensation for disability to be made at any time within one year. If the disability or death was the result of an injury sustained during the period of the Great War, and arising out of conditions due to the war, the commission may for any reasonable cause shown allow original claims of civilian employees of the Expeditionary Forces of the United States serving outside of the territory of the United States to be made at any time within one year after the passage of this Act."

Approved, June 13, 1922.

Published as Panama Canal Circular No. 600-27.

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

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The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office at Cristobal, C. Z., under the Act of March 3, 1879.

Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., July 19, 1922.

No. 49

Roland Line "Alda" with Heavy Loading.

In an item, "Heavy Loading of Three Steamers," in THE PANAMA CANAL RECORD of May 17, were cited the cases of the *Willhilo*, the *Sheaf Mead*, and the *Hague Maru*. The tonnages of cargo which they declared at time of transit through the Canal were 2.82, 2.23, and 2.38 times, respectively, the registered net tonnages of the ships.

The German steamer *Alda*, of the Roland Line, arriving at Balboa July 15 from Coronel, via Talcahuano and wayports, on the way to Hamburg, reported a cargo of 5,904 tons. The *Alda* is of 2,588 net tons, registry measurement; the ratio of tons of cargo to net tons in this case was 2.28. The Panama Canal net tonnage of the *Alda* is 3,392 tons.

Lower Passenger Rates on Pacific Steam Navigation Vessels to Europe.

The Pacific Steam Navigation Company advises of reductions in its passenger rates between the Isthmus and ports in England, France, and Spain, effective with the outward voyage of the *Oriana*, due at Cristobal on July 27. The base fares between Cristobal and England, France, and Spain are as follows:

First class, one way, £48; round trip, £86; second class, one way, £27; round trip, £49; intermediate, one way, £20; third class, one way, £15.

Fares are quoted in sterling, but United States currency is accepted at the current rate of exchange.

Coal.

THE PANAMA CANAL, DEPT. OF OPERATION AND MAINTENANCE,

BALBOA HEIGHTS, C. Z., July 18, 1922.

MEMORANDUM TO STEAMSHIP AGENTS:

Information has been received that the coal situation at Hampton Roads is becoming serious, contractors being unable to furnish cargoes. For this reason the steamship *Cristobal* has been temporarily laid up as she can not obtain a cargo of coal for the Isthmus.

Your attention is invited to the fact that The Panama Canal has plenty of coal to answer all demands which may be made for this commodity and it is believed that your principals, under the circumstances, should be so informed.

E. P. JESSOP,

Marine Superintendent.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 13, 1922.

Steamship *Howick Hall* reports passing a floating tree 28 feet long and 2½ feet in diameter, at 6.30 p. m., G. M. T., July 12, in Latitude 7° 44' North, Longitude 79° 48' West. This position is east of Cape Mala, R. P.

JAY J. MORROW,

Governor.

Origin and Destination of Cargo—Pacific to Atlantic, June, 1922.*

From—	NORTH AMERICA.						EUROPE.												Grand totals.	Percent of total cargo.		
	UNITED STATES.						Cristobal, C. Z. †	Total, North America.	Belgium.	British Isles.	Denmark.	France.	Germany.	Holland.	Italy.	Norway and Sweden.	Spain.	Europe. ‡			Total, Europe.	East coast of South America.
	Total, United States.				West Indies.																	
	North At- lantic ports.	South At- lantic ports.	Gulf ports.	Total, United States.																		
SOUTH AMERICA:																						
Chile	32,800	7,300		40,160		32	40,192	1,762	7,236		965	1,786	508					3,674	15,931		56,123	14
Panama	14,242			14,242		4,096	18,338		9,127			8		64				167	9,366	12	27,704	7.1
Colombia	617			617		2,740	3,357														3,369	0.9
Ecuador	1,357			1,357		1,631	2,988				604	241		330							4,163	1.1
West coast of South America †	2,438			2,438		947	3,385	14	2,289	148		1,623	16	6	65			1,669	5,830		9,215	2.3
Totals	51,514	7,300		58,814		9,446	68,260	1,776	18,652	148	1,569	3,658	524	400	65			5,510	32,302	12	100,574	25.7
NORTH AMERICA:																						
West coast of United States	118,902	3,495	4,136	126,533	2,664	807	130,064	35	48,671	812	7,520	5,811	1,414				106	7,012	71,381	915	202,300	51.8
West coast of Canada	4,862	1,500		6,362			6,362	10,212	3,287		1,336								14,835	21,197	5.4	
West coast of Central America	2,150			2,150	40	3,150	5,340		2		82	2,129							2,213		7,553	1.9
West coast of North America †	5,747	4,008		9,755		966	10,721		12,590		910							5,320	18,820		29,541	
Totals	131,721	9,003	4,136	144,860	2,704	4,923	152,487	10,247	64,550	812	9,848	7,940	1,414				106	12,332	107,249	915	280,651	66.7
ASIA:																						
China	6,887			6,887		202	7,089														7,089	1.8
Japan	2,966			2,966			2,966														2,966	0.7
Philippines	3,920			3,920			3,920														3,920	1.0
Malay Peninsula	1,771			1,771			1,771														1,771	0.5
Far East †	4,190			4,190			4,190														4,190	1.1
Totals	19,734			19,734		202	19,936														19,936	5.1
AUSTRALASIA:																						
New Zealand	1,182			1,182			1,182														1,182	0.3
Australasia †	1,694			1,694			1,694		7,004										7,004		8,758	2.2
Totals	2,876			2,876			2,876		7,004										7,004		9,940	2.5
Grand totals	205,845	16,303	4,136	226,284	2,704	14,571	243,559	12,023	90,266	960	11,417	11,508	1,938	400	65	106	17,842	146,615	927	391,101	100.0	
Per cent of total cargo:																						
June, 1922	52.6	4.2	1.0	57.8	0.8	3.7	62.3	3.1	23.1	0.2	2.9	3.0	0.5	0.1				4.6	37.5	0.2	100.0	...
May, 1922	45.3	3.6	1.8	50.7	0.6	2.7	54.2	0.4	28.1		0.3	5.1	1.3		2.3			8.1	45.6	0.1	...	...
June, 1921	29.1	11.4	3.6	44.1	1.7	4.1	49.9	0.9	30.1	0.6	0.4	4.2	0.4	5.2	1.1	0.1		6.9	49.9	0.2	...	...

* Figures represent tons of 2,240 pounds.

† Includes both local and transfer cargo.

‡ General cargo not routed so as to allow segregation among various ports.

Origin and Destination of Cargo—Atlantic to Pacific, June, 1922.*

From—	SOUTH AMERICA.					NORTH AMERICA.							FAR EAST.				AUSTRALASIA.				Grand totals.	Per cent of total cargo.			
	Chile.	Colombia.	Ecuador.	Peru.	West coast of South America. ²	Total, South America.	West coast of United States.	Balboa, C. Z.	West coast of Canada.	West coast of Central America.	Mexico.	West coast of North America. ²	Total, North America.	China.	Japan.	Philippines.	Far East. ²	Total, Far East.	New Zealand.	Australia.			Australasia. ²	Total, Australasia.	Hawaii.
NORTH AMERICA:																									
United States—																									
N. Atlantic ports	1,290	1,205	1,113	1,666	15,068	20,342	134,357	1	155	229	.....	134,742	13,263	43,602	16,267,797	83,678	488	19,386	8,421	28,295	8,100	275,157	46.9	
S. Atlantic ports	.....	.....	.....	2,400	5,487	7,887	3,522	.....	40	.....	.....	3,562	451	550	2,980	3,981	.....	.....	.....	.....	.....	15,430	2.6	
Gulf ports	.....	.....	.....	5,678	2,168	7,846	34,862	6,362	.....	.....	.....	5,500	46,724	24,980	16,513	16,749	58,248	.....	.....	8,882	.....	121,700	20.7	
Totals, United States	1,290	1,205	1,113	9,744	22,723	36,075	172,741	6,363	155	269	5,500	185,028	38,700	60,665	16,46,526	145,907	488	28,268	8,421	37,177	8,100	412,287	70.2		
CRISTOBAL, C. Z.:	37	523	42	106	2,435	3,143	2,264	.....	1,497	.....	.....	172	3,933	.....	.....	.....	.....	.....	.....	.....	.....	7,076	1.2	
E. coast, Mexico	29,888	.....	.....	.....	.....	29,888	9,600	.....	.....	3,000	.....	12,600	.....	.....	.....	.....	.....	.....	2,500	.....	2,500	42,488	7.3	
E. coast, Canada	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,500	0.5	
West Indies	200	.....	.....	.....	.....	200	.....	.....	7,338	.....	.....	7,338	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,538	1.3	
Totals, North America	31,415	1,728	1,155	9,850	25,158	69,306	175,005	15,963	7,338	1,652	3,269	5,672	208,899	38,700	60,665	16,46,526	145,907	488	28,268	10,921	39,677	8,100	471,889	80.5	
EUROPE:																									
Belgium	779	.....	54	238	.....	1,071	3,899	.....	66	.....	60	372	4,397	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,468	0.9
British Isles	11,633	.....	300	10,878	2,295	25,106	14,362	.....	8,433	.....	.....	22,795	.....	.....	.....	.....	.....	.....	7,251	29,357	.....	.....	77,258	13.2
France	295	.....	23	46	215	579	31	.....	.....	.....	.....	129	160	.....	.....	.....	.....	.....	.....	.....	.....	.....	739	0.1
Germany	263	.....	26	20	.....	309	.....	12	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	321	0.1
Holland	1,000	.....	.....	.....	.....	1,000	88	.....	.....	.....	.....	88	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,088	0.2
Europe ²	503	.....	.....	19,138	.....	19,641	3,602	.....	.....	.....	.....	480	4,082	.....	.....	.....	.....	.....	.....	.....	.....	.....	23,723	4.0
Totals, Europe	14,473	.....	403	11,182	21,648	47,706	21,982	8,511	.....	60	981	31,534	.....	.....	.....	.....	.....	.....	22,106	.....	7,251	29,357	108,597	18.5
E. COAST S. AMERICA.	.....	472	.....	.....	.....	472	5,375	.....	.....	.....	.....	5,375	.....	44	.....	44	.....	.....	.....	.....	.....	.....	5,891	1.0
Grand totals	45,888	2,200	1,558	21,032	46,806	117,484	202,362	15,963	15,849	1,652	3,329	6,653	245,808	38,700	60,709	16,46,526	145,951	22,594	28,268	18,172	69,034	8,100	586,377	100.0	
Per cent of total cargo:																									
June, 1922	7.8	0.4	0.2	3.6	8.0	20.0	34.5	2.7	2.7	0.3	0.6	1.1	41.9	6.6	10.4	7.9	24.9	3.9	4.8	3.1	11.8	1.4	100.0
May, 1922	9.8	0.2	0.1	1.2	5.7	17.0	33.7	.....	1.5	1.0	0.2	0.1	36.5	11.1	11.2	1.5	16.1	39.9	0.6	1.2	4.8	6.6	.....	.....
June, 1921	11.7	0.4	0.1	2.0	5.5	19.7	30.3	2.0	8.3	2.0	1.8	.....	44.4	8.1	10.6	0.2	6.4	25.3	1.6	3.9	5.1	10.6	.....	.....

* Figures represent tons of 2,240 pounds.

² General cargo not routed so as to allow segregation among various ports.³ Includes both local and transfer cargo.

THE PANAMA CANAL RECORD

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, July 15, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam	Salt water draft.	From—	For—	Cargo.	Panama Canal tonnage.		
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.									Tons.	Net.	
Amelia	30	17	48	9	6	11	9	13	19	Pacific Steam Navigation Co.	215.7	33.5	13.7	Cri-tolal	Champerico.	General.	328	1,273	706
Pescadore City.	8	14	51	9	7	15	9	14	37	U. S. Steel Products Co.	424.0	56.0	28.6	Baltimore.	Honolulu	General.	8,230	7,611	5,450
Niles	8	20	15	9	8	07	9	13	58	Kosmos Line.	410.9	50.6	23.0	Hamburg.	Guayaquil.	General.	2,973	6,652	4,704
San Jon Hall	8	12	14	9	9	45	9	15	46	Ellerman Lines, Ltd.	406.0	52.0	19.7	Capetown.	Vancouver.	Falla-t.	6,691	4,856	
Lase Fisher.	8	15	03	9	10	10	9	17	14	N. O. S. A. Line (S. B.).	253.0	48.0	19.7	New Orleans.	Guayaquil.	General.	2,000	2,939	2,017
Tacoma Maru.	9	11	11	9	11	40	9	18	55	Osaka Shosen Kaisha.	410.0	51.0	27.0	Buenos Aires.	Kobe.	(1)	5,287	6,146	4,241
Easton Cawdor	9	13	23	10	6	28	10	13	50	Hogarth Shipping Co.	422.5	56.2	27.2	Port Arthur.	Yokohama.	Case oil, asphalt.	7,283	6,750	4,849
Stanley	10	1	49	10	7	32	10	15	15	Earlier Line.	401.7	54.8	27.6	New York.	Yokohama.	General, steel.	7,953	6,933	5,187
Steel Voyager.	10	1	23	10	10	18	10	19	23	U. S. Steel Products Co.	395.5	55.0	27.6	Boston.	Seattle.	General.	8,300	7,283	5,255
Eastern Sea.	10	5	43	10	11	40	10	20	22	U. S. & American Line (S. B.).	384.0	51.1	23.8	New York.	Melbourne.	General.	6,500	5,934	4,415
Camilla Gilbert	10	5	43	10	10	19	10	21	24	W. C. Gilbert.	400.2	53.0	27.0	New York.	San Francisco.	General.	7,730	6,199	4,513
Coverton	10	21	04	11	6	30	11	15	20	Fred J. Gauntlett.	253.4	43.7	24.0	Baltimore.	Valparaiso.	Fertilizer, steel.	2,220	2,751	1,699
Aysen	8	14	38	11	11	50	11	18	08	Chilean Line.	379.6	44.3	21.6	Cri-tolal	Valparaiso.	General.	445	4,555	3,068
Santa Luisa.	11	19	00	12	6	17	12	14	00	Grace Line.	360.2	51.6	24.6	New York.	Talcahuano.	General.	3,363	5,694	3,975
Santa Fecla.	12	7	17	12	12	00	12	19	06	Grace Line.	298.6	40.0	20.0	New York.	Salvatore.	General.	2,234	2,832	1,833
Tynevie	12	12	45	12	13	15	12	20	13	Andrew Weir & Co.	400.0	52.0	24.11	New York.	Manila.	Case oil, general.	7,189	6,102	4,530
American	12	14	05	13	6	20	13	13	53	American-Hawaiian Line.	470.1	57.2	25.4	Philadel-phia.	Portland.	General.	4,937	9,158	6,970
Orita.	12	17	26	13	7	40	13	13	16	Pacific Steam Navigation Co.	485.5	58.2	24.2	Liverpool.	Valparaiso.	General.	1,383	9,936	6,561
Kat ma Luck-enbach	13	6	03	13	8	12	13	15	37	Luckenbach Line.	446.0	55.8	24.5	New York.	Los Angeles.	General.	6,130	8,508	6,179
Deane Castle.	13	12	53	13	9	25	13	17	24	Lancashire Shipping Co.	400.0	52.0	26.0	New York.	Cebu.	Steel, general.	7,177	5,846	4,112
Plum Branch.	13	9	22	13	10	18	13	18	42	F. and W. Ritsen.	400.0	52.0	22.0	Liverpool.	Valparaiso.	General.	3,714	5,761	3,881
Bacon Polworth	13	18	21	14	6	20	14	14	19	Hogarth Shipping Co.	402.0	52.0	24.0	Cardenas.	Vancouver.	Sugar.	6,300	5,497	4,105
S. C. T. Dodd.	13	21	14	14	7	27	14	13	02	Standard Oil Co.	425.0	57.2	23.0	Philadel-phia.	San Francisco.	ballast.	7,481	4,975	
huanhuaco.	13	11	05	14	11	08	14	13	14	Pacific Steam Navigation Co.	390.6	50.0	24.11	Hull.	Valparaiso.	General.	2,758	5,905	4,391
Professor.	13	12	40	14	6	18	14	15	14	Harrison Line.	350.2	46.0	14.7	Liverpool.	San Francisco.	Ballast.	4,051	2,845	
Atretil.	13	6	27	13	7	30	13	13	50	White Star Line.	500.0	63.0	28.0	London.	Wellington.	General.	9,000	12,896	9,571
Kat ma Luck-enbach	14	21	20	15	8	20	15	15	38	D. Steen.	414.5	53.7	29.4	Philadel-phia.	Shanghai.	Kerosene.	7,000	6,615	4,532
Lucien-bach.	15	4	15	15	9	00	15	16	37	Luckenbach Line.	331.5	47.0	27.0	Mobile.	San Francisco.	General.	5,500	4,808	3,768
Birmingham	15	9	15	15	9	40	15	17	25	U. S. Steel Products Co.	395.5	55.0	28.0	New York.	Seattle.	Steel, general.	7,826	6,841	4,685
City of Bristol.	15	6	24	15	10	32	15	18	14	Ellerman Hall Line.	451.0	56.6	27.0	New York.	Yokohama.	General.	8,435	8,063	6,188
Henry S. Grove	15	4	26	15	11	11	15	19	16	Atl. Gulf & Pac. Steamship Co.	404.0	54.0	26.0	Savannah.	Los Angeles.	General.	7,500	7,755	4,688
Whakatane.	15	8	15	15	11	55	15	20	32	New Zealand Shipping Co.	420.0	54.0	28.0	London.	Auckland.	General.	5,600	7,131	5,324

* Coffee, canary seed, steel sheet, and rails.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Steel Navi- gator.	8	14	10	9	6	56	9	14	10	9	17	45	American.	Isthmian Steamship Line.	424	2	56	2	25	0	Seattle	Boston	General	7	600	7	611	5	454	
Pacific Maru.	10	5	00	10	8	35	10	16	13	11	18	30	Japanese.	Kawasaki Dock Yard Co.	385	0	51	0	26	0	Vancouver	Colon	Wheat	7	700	6	251	4	736	
Neraskan.	10	7	00	10	9	08	10	16	33	10	16	33	American.	American-Hawak Line.	368	6	55	0	23	4	Seattle	Boston	General, lumber	4	937	5	707	3	643	
Red Hook.	10	7	00	10	10	56	10	18	05	11	15	25	American.	Todd Construction Co.	380	3	53	1	20	0	Vancouver	New Orleans	General	4	800	5	657	4	247	
Saint Jean.	10	10	30	10	12	14	10	19	26	11	11	49	French.	French Line.	397	0	50	0	25	0	Talcahuano.	Panilas	General	6	735	5	849	4	081	
Edward Luck- enbach.	10	12	05	11	7	00	11	15	15	11	20	55	American.	Luckenbach Line.	436	0	57	2	27	6	Seattle	New York	General.	7	206	8	543	6	427	
Sweden Maru.	10	17	25	11	7	54	11	15	38	11	15	38	Japanese.	Kawasaki Steamship Co.	385	0	51	0	27	0	Portland.	Hampton Rds	Wheat	7	449	5	926	4	397	
Hanover.	11	10	45	11	11	17	11	18	25	12	3	30	American.	U. S. Shipping Board	434	3	57	7	20	6	Il Ilo	New York	General.	4	246	7	982	5	911	
Bethore.	11	14	50	11	16	54	12	16	56	12	16	56	American.	Ore Steamship Corp.	550	1	72	0	32	0	Cruz Grande.	New York	Iron ore	10	400	15	476	11	102	
Stander.	11	4	10	12	6	53	12	14	10	13	12	07	American.	Pacific Mail Steamship Co.	380	6	48	7	22	0	San Francisco.	New York	General	2	175	3	929	4	178	
Stinty Dollar	11	18	00	12	7	49	12	15	25	13	1	53	American.	Dollar Line.	288	8	44	6	22	5	Vancouver	New York	General, lumber	3	800	3	459	2	404	
Liberator.	12	3	00	12	8	21	12	17	00	12	17	40	American.	U. S. Shipping Board	410	5	56	0	25	0	Portland	Baltimore.	General, lumber	8	500	8	199	6	216	
Santa Maria.	5	16	40	12	13	15	12	20	04	12	20	04	British.	Santa Maria Steamship Co.	460	0	60	3	25	0	Tocopilla.	Tampico	Ballast	8	746	5	679			
Howick Hall.	13	2	00	13	7	53	13	13	15	13	17	00	American.	U. S. Steel Products Co.	400	8	51	5	22	0	Vancouver.	Liverpool.	General	6	086	6	095	4	388	
Manavi	13	7	30	13	9	20	13	16	17				British.	Pacific Steam Navigation Co.	216	0	35	1	11	7	Guayaquil.	Cristobal.	General	248	1	357				
Gen. O. H.																														
Ernst.	12	21	00	13	13	37	13	20	32	15	9	55	American.	Panama Railroad Steamship Line	356	4	45	3	18	6	Guayaquil.	New York	General	747	4	503	2	764		
Jason.	13	9	00	13	14	50	13	22	05	15	2	00	Dutch.	Royal Steam Navigation Co.	346	4	48	0	21	7	Chile and Peru.	Amsterdam	General	3	786	4	321	2	120	
Capella.	12	6	47	14	6	47	14	13	55	14	17	10	American.	U. S. Navy.	390	0	54	0	15	2	Bremerton.	Hampton Rds.	Navy cargo.	325						
Solana.	13	13	55	14	7	47	14	15	01	14	19	37	American.	Pacific Mail Steamship Co.	409	5	56	0	16	6	Liquique.	Tampico	Ballast.	7	043	5	041			
Wilillo.	13	22	06	14	9	04	14	16	25	15	12	30	American.	Williams Steamship Co.	434	3	57	7	22	0	San Francisco.	New York	General.	7	044	7	983	5	882	
Urubamba.	14	6	30	14	10	12	14	16	30				Peruvian.	Peruvian Line.	381	2	46	1	18	0	Callao.	Cristobal.	General	1	202	4	803	2	951	
Canadian																														
Spinner.	14	8	00	14	10	48	14	18	05	14	21	20	British.	Canadian Government.	400	0	52	0	18	0	Melbourne.	New York.	General, wool.	2	550	5	871	4	094	
Jacob Lucken- bach.	14	12	30	14	13	09	14	19	28	14	19	28	Japanese.	Luckenbach Line.	414	5	53	7	22	6	San Francisco	Mobile, Ala.	General	3	523	7	314	5	270	
Alaska Maru.	14	12	45	14	13	59	14	21	35	14	22	15	American.	Osaka Shosen Kaisha.	420	0	53	0	20	0	Singapore.	New York.	General	4	500	7	623	5	502	
Alta.	15	2	30	15	7	47	15	15	21	15	19	43	German.	Rehnd Line.	360	0	51	0	23	3	Corral.	Hamburg.	General	5	409	4	791	3	392	
Liverpool Maru	7	30	15	8	47	15	17	00	15	17	00	15	Japanese.	Kokusan Kisen Kaishutsuki Kaisha	365	0	51	0	26	1	Portland.	Hull	Wheat	7	500	5	919	4	490	
Rozan Maru	15	11	00	15	11	17	15	19	32	15	22	41	Japanese.	Kokusai Kisen Kaishutsuki Kaisha	400	0	53	0	25	0	Portland.	United King	Wheat	7	267	5	914	4	295	
Igotz Mendi.	15	12	40	15	13	35	15	22	15	15	22	13	Spanish.	Seta & Ansar.	385	0	50	0	21	6	Guaymas.	Bilbao.	Cheek peas.	6	513	4	956	3	437	

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 9.	Atenas	United Fruit Co.	New Orleans via Bocas del Toro.	July 9.	Oranie Nassau.	Royal Netherlands W. I. Mail	Puerto Colombia.
July 9.	Montevideo.	Spanish Line.	Barcelona via wayports.	July 9.	Panama.	Panama Railroad Steamship Line.	New York via Haiti.
July 10.	Heredia.	United Fruit Co.	New Orleans.	July 10.	Atenas	United Fruit Co.	Bocas del Toro.
July 11.	Ulva.	United Fruit Co.	New York via Habana.	July 12.	Montevideo.	Spanish Line	Barcelona via wayports.
				July 12.	H. M. S. Wistaria.	British Government	Kingston.

(Continued on page 610, column 2.)

Notice to Mariners.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 13, 1922.

The Commanding Officer of the U. S. S. *Birmingham* reports that on May 31, 1922, the following buoys had been established in Corinto Harbor, Nicaragua:

A red nun buoy on the bearings: Entrance range front beacon, 77°; and Cardon Head lighthouse, 136° 30'.

A black nun buoy on the bearings: White beacon off northeast side of Cardon Island on 175°, and Cardon Head lighthouse, 245°.

A red spar on the bearings: Corinto church steeple, 28°; and Mount Dona Paula range front beacon, 118° 30'.

A red spar buoy on the bearings: Corinto church steeple, 2°; and white beacon off northeast side of Cardon Island, 267° 30'.

A black can buoy recently moored to mark the 16-foot shoal on the port hand entering was removed on the bearings: White beacon off northeast side of Cardon Island, 252°; and Cardon Head lighthouse, 290° 30'.

JAY J. MORROW,
Governor.

Notice to Mariners.—Menaces to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 17, 1922.

1. From Master of steamship *Delrosa*, July 15, 30 hours G. M. T. (probably an error in time):

Lat. 7° 49' N., Long. 79° 01' W., passed large log about 30' long, 3' in diameter, heavily coated with barnacles.

2. From Master, steamship *Coverun*, 9 a. m., July 16:

Lat. 13° 34' N., Long. 93° 04' W., passed partially submerged log about 20' long, 3' in diameter.

3. From Master, steamship *Birmingham City*, 10.30 a. m., July 16:

Lat. 7° 08' N., Long. 80° 38' W., passed large tree with many branches. Dangerous to navigation.

4. From Master, steamship *Whakatane*, July 16:

Lat. 7° 35' N., Long. 79° 46' W., passed water-logged tree previously reported July 6.

JAY J. MORROW,
Governor.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 18, 1922.

From Master, steamship *Whakatane*, July 16, 2.19 p. m.:

Lat. 6° 37' North, Long. 80° 38' West, passed large water-logged tree, apparent size 70 feet long, 2 feet in diameter. Very dangerous to navigation.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended July 17:

Steamship *Ionic*, braze 2 copper feed water suction pipes; yacht *Almirante*, renew bowsprit, broken in locks; steamships *Imperial*, cast, machine, and install new side frame casting for anchor windlass; *Edward Luckenbach*, furnish services of diver to examine propeller; motor schooner *Laura C. Hall*, repair exhaust manifold; steamship *Santa Maria*, manufacture and install 2 ramps on each of 4 capstan heads in way of gear changing socket; alter piping to midship sanitary tanks; repair water heater in foremen's forecabin; overhaul 1 blow-down valve on after starboard boiler; relocate 2 forward davits, port and starboard; furnish air for ship's use in operating pumps; furnish steam for steaming up boilers; braze 1 copper main feed pipe; renew suction pipe to circulating system on ammonia condenser; repair 1 oil line gate valve on deck; renew bronze valve seat in starboard Weir feed water pump; manufacture and install mushroom ventilator on poop deck, starboard side; and manufacture and install 1 wooden ladder, 25 feet long, in hold; *Jephtha*, renew 6

tubes in bottom row of starboard boiler; *Californian*, furnish services of diver to examine propeller; *Mundella*, weld and machine wrench for main engine; dredge *Paisao*, dry-dock for widening hull, so as to increase her stability equal to that of the dredge *Cascadas*.

The following vessels were at the Cristobal shops for repairs during the week ended July 17:

Steamships *Manavi*, repair windlass; face up valves and seats for Weir's pumps; fit spare pinions to port and starboard after winches; lift rudder and rebush pintles; clean and paint hull; overhaul sea valves and cocks; draw tail shaft and rebush bottom half of stern bush; renew iron plate under stern frame; repair ceiling in No. 1 lower hold; overhaul anchor chains, etc.; *Litiopa*, repair L. P. piston ring; 3 oil burner pipes, and cocks for heater pipes; *Mount Baker*, weld and rebore flywheel; bore piston wrist pin and fit new pin and bushings; *Colon*, repair deck house plating, outside of purser's office and No. 1 lifeboat; *General O. H. Ernst*, furnish flywheel for turning engine and machine same; install new rubber in No. 2 port and starboard cargo ports; U. S. mine planter *Graham*, repair H. P. piston valves and valve chambers; repair H. P. piston rings and pistons; repair L. P. valves; renew main topmast, etc.; steamships *Carrillo*, *Willhilo*, *Orita*, dredge No. 83, launch *Azimuth*, minor repairs.

Report of Cargo Discharged and Laded by Vessels Entering and Clearing from Port of Cristobal for Two Weeks Ending July 15, 1922.

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				Tons.	Tons.
Huasco.....	Chilean Line.....		July 2.....		422
Honduras.....	French Line.....		July 2.....		230
Cuba.....	Pacific Mail Steamship Co.....		July 2.....		1,514
San Benito.....	United Fruit Co.....	July 2.....	July 2.....	60	63
Turrialba.....	United Fruit Co.....	July 2.....	July 3.....	(⁺)	147
Adalia.....	Hamburg-American Line.....	July 3.....	July 3.....	8	87
Cartago.....	United Fruit Co.....	July 3.....	July 6.....	1,494	1
Panama.....	Panama Railroad Steamship Line.....	July 3.....	July 3.....	1,912	
Salvador.....	Pacific Steam Navigation Co.....		July 6.....		430
Cristobal.....	Panama Railroad Steamship Line.....		July 6.....		9
Ucayali.....	Peruvian Line.....	July 3.....	July 8.....	1,696	251
Oranje Nassau.....	Royal Netherlands W. I. Mail.....	July 4.....	July 5.....	328	(⁺)
Osterndorf.....	Kosmos Line.....	July 4.....	July 5.....	430	(⁺)
Pastores.....	United Fruit Co.....	July 4.....	July 5.....	201	259
Camden.....	United Fruit Co.....	July 4.....	July 5.....	8,857	(⁺)
Haiti.....	French Line.....	July 4.....	July 6.....	20	450
San Blas.....	United Fruit Co.....	July 5.....	July 6.....	15	1
Turrialba.....	United Fruit Co.....	July 6.....	July 6.....	2	145
Almazro.....	Pacific Steam Navigation Co.....	July 6.....	July 7.....	380	198
Orestes.....	Royal Netherlands W. I. Mail.....	July 6.....	July 7.....	102	27
El Paso.....	Southern Pacific Co.....	July 6.....	July 8.....	231	(⁺)
Venezuela.....	Pacific Mail Steamship Co.....	July 6.....	July 8.....	155	321
John Worthington.....	Standard Oil Co.....	July 7.....	July 8.....	11,750	(⁺)
Oranje Nassau.....	Royal Netherlands W. I. Mail.....	July 7.....	July 8.....	20	2,234
Aysen.....	Chilean Line.....	July 8.....	July 8.....	147	
Coronado.....	Elders & Fyffes, Ltd.....	July 8.....	July 8.....	10	1
Panama.....	Panama Railroad Steamship Line.....		July 9.....		2,073
Atenas.....	United Fruit Co.....	July 9.....	July 10.....	(⁺)	52
Aysen.....	Chilean Line.....		July 11.....		529
Montevideo.....	Spanish Line.....	July 9.....	July 12.....	142	142
Saint Jean.....	French Line.....	July 10.....	July 11.....	29	55
Heredia.....	United Fruit Co.....	July 10.....	July 13.....	412	53
Ulva.....	United Fruit Co.....	July 11.....	July 12.....	270	174
Lompoc.....	Union Oil Co.....	July 11.....	July 13.....	9,600	(⁺)
Carrillo.....	United Fruit Co.....	July 12.....	July 13.....	2	229
Ecuador.....	Pacific Mail Steamship Co.....	July 12.....	July 13.....	292	184
Sixacola.....	United Fruit Co.....	July 12.....	July 13.....	11	9
Atenas.....	United Fruit Co.....	July 13.....	July 13.....	51	60
Colon.....	Panama Railroad Steamship Line.....	July 13.....		2,857	
Jason.....	Royal Netherlands W. I. Mail.....	July 13.....	July 14.....	82	721
Professor.....	Harrison Line.....	July 13.....	July 15.....	440	(⁺)
Manavi.....	Pacific Steam Navigation Co.....	July 13.....		248	
Huanchaco.....	Pacific Steam Navigation Co.....	July 13.....	July 14.....	204	194
Gen. O. H. Ernst.....	Panama Railroad Steamship Line.....	July 13.....	July 15.....	739	(⁺)
Litiopa.....	Anglo-Saxon Petroleum Co.....	July 13.....		6,500	
Urubamba.....	Peruvian Line.....	July 14.....		1,254	
Oscar D. Bennett.....	Huasteca Petroleum Co.....	July 14.....		7,000	
Eupatoria.....	Hamburg-American Line.....	July 15.....		21	
Conde de Churruca.....	Anglo-Saxon Petroleum Co.....	July 15.....		6,150	

⁺ No cargo laded.

⁺ No cargo discharged.

Official Circulars.

Act of Congress.—Relief and Protection of American Seamen—Payment to Panama.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 5, 1922.

CIRCULAR No. 600-83:

The extracts from an Act of Congress quoted below are published for the information of all concerned.

JAY J. MORROW,
Governor.

AN ACT Making appropriations for the Departments of State and Justice and for the Judiciary for the fiscal year ending June 30, 1923, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Departments of State and Justice and for the Judiciary, for the fiscal year ending June 30, 1923, namely:

TITLE I—DEPARTMENT OF STATE.

RELIEF AND PROTECTION OF AMERICAN SEAMEN.

For relief and protection of American seamen in foreign countries, and in the Panama Canal Zone, and shipwrecked American seamen in the Territory of Alaska, in the Hawaiian Islands, Porto Rico, the Philippine Islands, and the Virgin Islands, \$220,000: *Provided*, That no part of this appropriation shall be available for payment for the transportation on steam vessels of any seamen in excess of the amount agreed upon between the consular officer and the master of the vessel in each individual case; and hereafter the amount so agreed upon not in excess of the lowest passenger rate of such vessel and not in excess of 2 cents per mile, together with such additional compensation for transporting sick or disabled seamen as is now provided by law, shall in each case constitute the legal rate.

PAYMENT TO THE GOVERNMENT OF PANAMA.

To enable the Secretary of State to pay to the Government of Panama the eleventh annual payment, due on February 26, 1923, from the Government of the United States to the Government of Panama under article 14 of the treaty of November 18, 1903, \$250,000.

Approved, June 1, 1922.

Supplying Intoxicating Liquor to Ships.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 13, 1922.

To all concerned.—It is hereby ordered that no employee of The Panama Canal or Panama Railroad Company shall in any manner have any connection with any company or individual engaged in the business of supplying intoxicating liquor to ships. Employees are not permitted to take or transmit orders for liquors.

Employees whose duties are connected with the operation of shipping, in the Marine Division, customs offices, or elsewhere, are especially cautioned to have no personal connection, directly or indirectly, with business firms or individuals supplying ships, except such connection as is required in the performance of their official duties.

JAY J. MORROW,
Governor, The Panama Canal.
President, Panama Railroad Co.

MOVEMENTS OF OCEAN VESSELS.—Continued from page 607.

PORT OF CRISTOBAL—continued.

*ARRIVALS.			*DEPARTURES.		
Date.	Vessel.	From—	Date.	Vessel.	Line.
July 11.	Lompoc.	C. T. Bowring & Co.	July 12.	Ulua.	United Fruit Co.
July 12.	Carillo.	United Fruit Co.	July 13.	Hercia.	United Fruit Co.
July 12.	Sivola.	United Fruit Co.	July 13.	Aceña.	United Fruit Co.
July 13.	Colon.	Panama Railroad Steamship Line.	July 13.	Sicula.	United Fruit Co.
July 13.	Atenas.	Panama Railroad Steamship Line.	July 13.	Corrallo.	United Fruit Co.
July 13.	Litopa.	United Fruit Co.	July 14.	Lompoc.	C. T. Bowring & Co.
July 13.	Oscar D. Bennett.	And-Savon Petroleum Co.			
July 14.	Eupatoria.	Pan-American Pet. & Transp. Co.			
July 15.	Conde de Churruar.	Hamburg-American Line.			
July 15.		Soc. Comercial de Oriente.			
PORT OF BALBOA.			PORT OF BALBOA.		
July 10.	Laura C. Hall.	Euenaventura.	July 13.	Laura C. Hall.	Pacific Metals Corp.
July 13.	Delrosa.	Seattle.	July 14.	Delrosa.	U. S. Shipping Board
July 14.	Jeptia.	Antofagasta.	July 15.	Jeptia.	U. S. Shipping Board
					Buenaventura.
					Tacoma.
					Valparaiso.

*Other than ships passing through the Canal.

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THE PANAMA CANAL RECORD



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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical
information and is required for the proper transaction of the public business.

Volume XV.

Balboa Heights, C. Z., July 26, 1922.

No. 50.

Largest Cargo Carried Through the Canal.

A new high record for tons of cargo carried through the Canal was set by the steamer *Marore* of the Ore Steamship Corporation, when she made the transit of the Canal on July 19 with 20,000 tons of iron ore, bound from Cruz Grande, Chile, to New York.

The previous record was set by a sister ship of the *Marore*, the *Bethore*, making the transit on May 29 with 19,000 tons of ore. The *Marore* was drawing 33 feet of water at time of transit, the *Bethore* 32 feet 6 inches.

Although the *Bethore* and the *Marore* are of similar construction and differ very little, if at all, in deadweight carrying capacity, the *Bethore's* Canal tolls are \$12,020, while the *Marore's* tolls are only \$5,156.40. This is due to a difference in the tanks. In the *Marore* they are blanked off in such a way that they can only be used for salt-water ballast, and do not figure in the net tonnage. On the *Bethore*, however, the tanks are available for oil cargo, and on her voyage south this ship will commonly carry oil from Mexico, returning with ore from Chile.

Lowest Unit Cost of Tolls Per Ton of Cargo Carried.

The passage of the *Marore* with 20,000 tons of iron ore, under payment of \$5,156.40 in tolls, sets a new low figure for the cost of tolls per ton of cargo, 25.78 cents.

A study of the cost of tolls per ton of cargo carried through the Canal on ships variously loaded was published in THE PANAMA CANAL RECORD of April 4, 1917. The lowest unit cost among 288 ships which were considered was 37 cents per ton, in the case of a shipment of 8,400 tons of nitrate on the *Alfred Nobel*, which paid \$3,093.84 in tolls.

The lowest cost per ton of iron ore, in the study mentioned above, was 52 cents.

CANAL WORK IN JUNE.

The following is the report of the Governor to the Secretary of War, of Canal work in the month of June, 1922:

The Honorable, the Secretary of War,
Washington, D. C.

BALBOA HEIGHTS, C. Z., July 19, 1922.

SIR: I have the honor to submit the following report of The Panama Canal for the month of June, which closes the fiscal year period ending June 30, 1922.

CANAL TRAFFIC FOR FISCAL YEAR.

The number of ships transiting the Canal during the fiscal year ending June 30, 1922, was somewhat under that for the preceding fiscal year. The tonnage of ships through the Canal, tolls collected, and tons of cargo in transit through the Canal were also slightly under the totals for last year, as the following summary shows:

	Fiscal year 1922.	Calendar year 1921.	Fiscal year 1921.	Fiscal year 1920.
Number of ships.....	2,736	2,783	2,892	2,478
Net tonnage, Panama Canal measurement.....	11,417,459	11,435,811	11,415,876	8,546,044
Tolls.....	\$11,197,832.41	\$11,261,098.80	\$11,276,889.91	\$8,513,933.15
Tons of cargo.....	10,884,910	10,707,005	11,599,214	9,374,499

A more detailed report of traffic through the Canal during the past fiscal year will be included in my report for the fiscal year which is now being compiled.

CANAL TRAFFIC FOR JUNE.

The tonnage of ships transiting the Canal, together with tolls, etc., were somewhat under that for the preceding month. This was due to an unusually light traffic passing through the Canal from the Pacific to the Atlantic, the tonnage moving in this direction being the lowest of any month during the past fiscal year with the exception of January. Practically all geographical regions contributing to the Pacific to Atlantic traffic showed a decrease in tonnage from that of the preceding month, but the most marked decline was in tonnage from Australasia which contributed a total tonnage (Panama Canal measurement) of 9,982 for the month of June, as against a tonnage of 41,334 for the preceding month, and 75,400 for the month of June last year. The tonnage from the Far East also showed a decline, and in this connection it is of interest to note that the tonnage through the Canal routed to the Far East and Australasia totaled 186,357 as against a total tonnage through the Canal routed from these two regions of but 26,839 net tons.

• Traffic through the Canal from the Atlantic to the Pacific was unusually good for June, however, and served to keep the traffic figures for the month up to the average.

With the close of the fiscal year the annual movement of grain from the west coast of the United States and Canada was just getting under way and it is anticipated that with shipments of wheat and barley, together with fruit, salmon, etc., the traffic from the Pacific to the Atlantic will show a substantial increase for the next several months.

The total number of vessels and craft of all kinds transiting the Canal during June, as compared with the preceding month and with the corresponding month of last year, was as follows:

	June, 1922.	May, 1922.	June, 1921.
Commercial vessels.....	228	243	192
Noncommercial vessels.....	24	18	33
Launches, etc. (under 10 tons measurement).....	4	6	3
Total vessels and craft through Canal.....	256	267	228

In addition to the foregoing, Panama Canal equipment consisting of floating cranes, barges, dredges, tugs, launches, etc., was passed through the locks in June as follows:

	North-bound.	South-bound.	Total.
Gatun.....	21	28	49
Pedro Miguel.....	27	30	57
Miraflores.....	26	30	56
Totals.....	74	88	162

COMMERCIAL TRAFFIC.¹

Comparative Traffic Statistics.

The following tabulations permit a ready comparison of commercial traffic through the Panama Canal during the month of June, 1922, with that of the preceding month along the lines indicated at the head of the various tables:

¹ Commercial traffic includes all ocean-going vessels paying tolls. Vessels in the direct service of the United States Government, including merchant vessels chartered by the Government, do not pay tolls. Shipping Board vessels in commercial traffic pay tolls. Statistics on vessels not paying tolls are shown under "noncommercial traffic."

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TONNAGE, TOLLS, AND CARGO CARRIED.

	June, 1922.	May, 1922.	June, 1921.	Average month for past year.
United States equivalent net tonnage.....	773,798	828,683	613,894	766,801
Panama Canal net tonnage.....	970,713	1,032,816	761,477	951,455
Registered gross tonnage.....	1,228,038	1,297,553	960,857	1,196,757
Registered net tonnage.....	776,410	822,290	610,491	762,601
Tolls.....	\$932,290.42	\$1,015,057.37	\$751,964.12	\$933,152.70
Tons of cargo.....	977,478	1,158,507	694,720	907,076

AVERAGE TONNAGE, TOLLS, AND TONS OF CARGO CARRIED PER VESSEL.

	June, 1922.	May, 1922.	June, 1921.
United States equivalent net tonnage.....	3,394	3,410	3,197
Panama Canal net tonnage.....	4,257	4,250	3,965
Registered gross tonnage.....	5,386	5,340	5,004
Registered net tonnage.....	3,405	3,384	3,180
Tolls.....	\$4,089.99	\$4,177.19	\$3,703.95
Tons of cargo (including vessels in ballast).....	4,287	4,356	3,618
Tons of cargo (laden vessels only).....	4,724	5,149	3,970

UNITED STATES COASTWISE TRAFFIC.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
June.....	17	96,199	\$94,577.11	68,809	11	53,986	\$53,953.75	57,234
July.....	19	101,924	99,474.75	60,997	14	70,477	72,103.75	91,991
August.....	19	86,278	81,734.17	55,387	23	110,899	118,316.25	129,792
September.....	25	134,239	136,340.58	72,620	15	88,111	83,011.64	104,642
October.....	22	113,712	116,752.05	86,442	19	96,731	101,710.00	105,951
November.....	24	136,349	131,558.19	91,067	17	86,958	88,339.80	101,460
December.....	20	104,152	106,549.80	73,967	23	116,482	117,600.08	105,134
January, 1922.....	28	138,928	141,404.35	119,413	20	108,921	111,440.00	86,862
February.....	25	117,512	116,235.50	94,548	19	89,862	84,133.82	84,330
March.....	34	162,572	161,738.65	141,648	25	128,988	124,465.78	123,657
April.....	24	114,283	110,272.10	137,207	26	131,193	130,010.00	118,682
May.....	32	152,260	153,626.80	173,128	23	108,686	111,151.00	108,319
June.....	34	161,981	156,172.74	181,651	25	121,156	113,554.60	113,692

UNITED STATES SHIPPING BOARD VESSELS.

	Atlantic to Pacific.				Pacific to Atlantic.			
	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.	No. of ships.	P. C. net tonnage.	Tolls.	Tons of cargo.
1921.								
June.....	17	86,361	\$78,770.14	65,945	11	49,370	\$48,080.00	59,696
July.....	12	67,851	65,796.25	29,918	12	60,804	61,805.00	82,767
August.....	15	76,570	71,607.58	46,542	18	79,390	77,353.39	91,897
September.....	10	53,816	51,785.48	38,368	16	84,433	82,566.25	109,610
October.....	10	55,300	53,475.00	34,593	14	61,980	62,318.75	79,129
November.....	12	74,635	71,525.74	44,976	5	29,949	29,127.50	28,865
December.....	9	47,604	46,318.75	44,101	6	32,957	32,803.75	28,784
January, 1922.....	6	34,546	34,756.25	23,575	7	31,550	30,646.95	28,831
February.....	8	39,168	36,706.25	49,424	6	32,909	31,538.75	21,119
March.....	16	84,766	86,531.95	90,633	9	51,848	46,734.40	37,310
April.....	7	35,406	35,006.25	51,244	9	49,140	50,900.85	43,783
May.....	13	68,285	67,898.75	89,483	9	42,499	41,595.00	50,953
June.....	9	44,694	45,091.20	50,219	4	18,833	15,957.14	16,230

ORIGIN AND DESTINATION OF TONNAGE.

The following statements show, by months, the origin and destination of all tonnage through the Canal during the past year, the figures representing the Panama Canal net tonnage:

THE PANAMA CANAL RECORD

ORIGIN OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	East coast of United States.	Europe.	Mexico.	Cristobal.	Miscellaneous.	Total.
1921.						
June.....	250,806	79,129	37,401	28,920	19,046	415,302
July.....	221,318	124,108	23,167	23,488	10,970	403,051
August.....	257,600	175,768	15,527	21,202	17,122	487,219
September.....	277,984	160,534	10,889	23,038	58,189	530,634
October.....	262,440	226,431	27,828	20,516	33,960	571,175
November.....	301,680	192,594	14,997	18,444	11,302	539,017
December.....	312,225	198,287	21,113	15,601	28,443	575,669
1922.						
January.....	279,870	153,315	30,271	18,398	31,910	513,764
February.....	273,996	146,572	30,477	19,061	17,899	488,005
March.....	382,213	144,630	17,223	21,389	20,586	586,041
April.....	305,725	138,836	15,443	17,508	43,176	520,688
May.....	403,970	118,012	26,305	22,529	23,897	594,713
June.....	367,338	159,506	22,949	18,182	26,221	594,196
Average month for past year.....	291,100	158,309	22,274	20,479	26,569	518,731

DESTINATION OF ALL TONNAGE—ATLANTIC TO PACIFIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
1921.						
June.....	143,217	106,369	83,063	46,298	36,355	415,302
July.....	194,358	45,391	63,969	58,062	41,271	403,051
August.....	164,577	106,886	94,486	70,551	50,719	487,219
September.....	268,758	90,105	80,242	53,309	38,220	530,634
October.....	280,483	78,532	100,332	69,057	42,771	571,175
November.....	216,092	107,721	95,216	78,493	41,495	539,017
December.....	188,615	115,980	136,940	84,391	49,743	575,669
1922.						
January.....	170,927	112,160	100,878	83,526	46,273	513,764
February.....	151,388	107,476	107,197	94,271	27,673	488,005
March.....	195,833	105,532	149,697	83,107	51,872	586,041
April.....	145,819	121,973	121,594	81,436	49,866	520,688
May.....	184,282	142,801	178,176	49,410	40,044	594,713
June.....	197,065	158,597	99,806	86,551	52,177	594,196
Average month for past year.....	193,094	104,726	102,785	74,088	44,037	518,731

ORIGIN OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	West coast of United States.	West coast of South America.	Far East.	Australasia.	Miscellaneous.	Total.
1921.						
June.....	116,521	112,474	18,740	75,400	23,040	346,075
July.....	174,412	99,745	41,084	70,124	22,197	407,562
August.....	229,629	110,248	20,628	68,661	48,894	478,067
September.....	218,453	84,212	14,762	30,814	46,262	394,503
October.....	252,645	124,560	37,720	41,436	42,018	498,379
November.....	189,942	126,381	23,556	6,581	56,934	403,394
December.....	195,969	135,952	28,194	39,616	41,844	441,575
1922.						
January.....	152,992	100,224	16,860	27,172	35,504	332,752
February.....	142,693	110,778	21,594	42,950	80,515	398,530
March.....	175,669	104,847	15,008	48,575	45,671	389,770
April.....	182,496	124,842	31,969	75,485	39,353	454,145
May.....	170,412	133,033	24,388	41,334	68,936	438,103
June.....	160,229	110,603	16,857	9,982	78,846	376,517
Average month for past year.....	186,221	108,427	24,099	43,809	46,820	409,376

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
1921.						
June.....	155,147	136,292	18,324	26,112	10,300	346,175
July.....	205,690	134,047	23,123	28,770	15,932	407,562
August.....	231,830	194,279	27,256	22,022	2,670	478,057
September.....	204,820	140,555	26,478	17,114	5,536	394,503
October.....	259,613	170,189	18,222	30,955	19,400	498,379
November.....	196,974	164,345	20,446	16,700	4,869	403,394
December.....	191,277	192,575	25,550	21,739	10,434	441,575

DESTINATION OF ALL TONNAGE—PACIFIC TO ATLANTIC.—continued.

Month.	Europe.	East coast of United States.	Mexico.	Cristobal.	Miscellaneous.	Total.
1922.						
January	115,392	168,337	26,831	16,489	5,703	332,752
February	163,919	172,900	31,767	18,242	11,702	398,530
March	134,687	193,267	34,969	18,724	8,123	389,770
April	169,493	242,087	6,615	20,266	15,684	454,145
May	165,143	224,244	17,474	16,637	14,605	438,103
June	111,440	215,947	16,301	27,306	5,523	376,517
Average month for past year	176,714	180,800	19,097	21,894	10,871	409,376

In connection with the foregoing tabulations, the following statement shows the percentage of increase or decrease for the month of June, 1922, of Panama Canal net tonnage to and from the principal geographical regions contributing to Canal traffic, as compared with the average month for the past year.

	Tonnage routed to—		Tonnage routed from—	
	Per cent increase.	Per cent decrease.	Per cent increase.	Per cent decrease.
Europe		58.6	0.7	
East coast of United States	19.4		29.3	
East coast of Mexico		14.6	3.0	
Cristobal, C. Z.		24.7		11.2
West coast of United States	2.1			14.0
West coast of South America	51.4		2.0	
Australasia	16.8			77.2
Far East		3.0		43.0

TRAFFIC BY TRADE ROUTES.

A detailed statement of traffic through the Panama Canal by trade routes for the month of June, 1922, was published in THE PANAMA CANAL RECORD under date of July 12, 1922. The following tabulations show the number of vessels, Panama Canal net tonnage, and tons of cargo carried over the principal trade routes during June, 1922, as compared with the preceding month, and with the corresponding month of last year.

	Atlantic to Pacific.			Pacific to Atlantic.		
	June, 1922.	May, 1922.	June, 1921.	June, 1922.	May, 1922.	June, 1921.
	Number of vessels.			Number of vessels.		
United States coastwise ports	34	32	17	25	23	11
United States and Far East	19	32	15	3	5	4
Europe and United States	5	5	5	6	11	12
United States and South America	14	13	10	12	19	14
Europe and South America	14	11	8	8	8	9
Cristobal and South America	9	10	15	11	8	14
Europe and Australasia	7	3	2	1	5	10
United States and Australasia	7	3	5	1	1	1
Europe and Canada	5	4	1	7	7	
Mexico and United States			2			
Mexico and South America	4	5	3	2	3	2
United States and Canada	1	2	2	4	4	2
Miscellaneous	16	14	18	13	15	10
Totals	135	134	103	93	109	89
	Panama Canal net tonnage.			Panama Canal net tonnage.		
United States coastwise ports	161,981	152,260	96,199	121,156	108,686	53,986
United States and Far East	95,705	169,435	78,774	16,857	24,388	18,420
Europe and United States	27,867	23,309	26,138	29,803	55,260	56,768
United States and South America	57,326	55,713	31,436	43,627	64,825	51,040
Europe and South America	58,517	44,611	33,678	35,784	36,327	27,603
Cristobal and South America	14,285	17,876	25,929	19,580	13,334	21,872
Europe and Australasia	44,934	23,804	14,414	6,581	32,230	70,456
United States and Australasia	37,525	15,986	31,884	3,401	4,944	4,944
Europe and Canada	26,188	24,114	4,899	37,952	37,041	
Mexico and United States			12,992			
Mexico and South America	17,638	23,979	14,704	10,990	12,989	10,132
United States and Canada	4,225	9,657	3,655	23,481	19,639	7,902
Miscellaneous	48,005	33,969	41,400	27,305	28,440	23,052
Totals	594,196	594,713	415,302	376,517	438,103	346,175

	Atlantic to Pacific.			Pacific to Atlantic.		
	June, 1922.	May, 1922.	June, 1921.	June, 1922.	May, 1922.	June, 1921.
	Tons of cargo carried.			Tons of cargo carried.		
United States coastwise ports.....	181,651	173,128	68,809	113,692	108,319	57,234
United States and Far East.....	140,962	264,900	88,567	19,936	35,955	17,584
Europe and United States.....	8,404	19,522	15,545	49,541	92,495	89,641
United States and South America.....	36,136	28,546	25,545	59,531	81,393	56,081
Europe and South America.....	47,963	37,547	15,985	32,594	49,546	37,491
Cristobal and South America.....	2,827	3,132	3,818	8,344	5,218	8,921
Europe and Australasia.....	29,357	14,935	4,418	5,440	21,469	40,130
United States and Australasia.....	37,177	18,710	33,538	4,500	1,065	5,344
Europe and Canada.....	23,809	15,569	2,398	55,579	52,449	.....
Mexico and United States.....	.....	.....	20,000	.....	.....	.....
Mexico and South America.....	32,888	44,109	27,712	.....	.....	.....
United States and Canada.....	5,500	15,300	6,800	31,208	21,322	12,380
Miscellaneous.....	39,703	38,000	46,449	10,736	15,873	10,330
Totals.....	586,377	673,398	359,584	391,101	485,109	335,136

TOLLS.

Under the present dual method of assessing tolls, the revenue from this source was \$932,290.42. Had the net tonnage as determined by the Panama Canal rules of measurement been used throughout as a basis for collecting tolls, the total revenue would have been increased by \$197,092.70. The additional tolls would have been contributed by nationality of vessels as follows:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$39,065.82	\$9,458.65	\$48,524.47
Chilean.....	1,681.35	2,548.10	4,229.45
Danish.....	3,541.05	2,126.95	5,668.00
Dutch.....	3,305.50	6,862.25	10,167.75
French.....	493.20	676.45	1,169.65
German.....	1,379.60	902.30	2,281.90
Italian.....	.....	1,130.10	1,130.10
Japanese.....	1,476.20	3,035.50	4,511.70
Norwegian.....	6,961.80	902.90	7,864.70
Panamanian.....	.....	1.56	1.56
Peruvian.....	4,673.95	4,673.95	9,347.90
Swedish.....	2,332.10	.....	2,332.10
United States.....	52,679.59	47,186.95	99,866.54
Totals.....	117,590.16	79,502.54	197,092.70

*Tolls greater through use of U. S. equivalent tonnage.

The additional tolls which would have been assessed against vessels of United States registry would have been distributed among the following channels of trade:

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
United States coastwise ports.....	\$37,587.50	\$29,161.40	\$66,748.90
United States and Canal Zone ports.....	1,343.75	847.80	2,191.55
United States and United States possessions.....	1,040.80	.....	1,040.80
United States and foreign ports.....	9,671.04	13,366.75	23,037.79
Between foreign ports.....	3,036.50	3,811.00	6,847.50
Totals.....	52,679.59	47,186.95	99,866.54

Of the \$197,092.70 additional revenue that would have been collected by using the Panama Canal rules of measurement exclusively, \$8,604 represents the additional tolls that would have been collected on account of deck cargo.

AVERAGE TOLLS PAID PER CARGO TON BY NATIONALITY OF VESSELS.

All cargo-carrying vessels pay tolls on their net tonnage as determined by established rules for measuring their available cargo-carrying space; the rate of such tolls per cargo ton varying in different vessels and in vessels of different nationalities with the ratio of cargo tonnage to net tonnage. The table below is indicative of the ratio of cargo tonnage to net tonnage for the month of June, 1922, by nationality of vessels.

	Atlantic to Pacific.	Pacific to Atlantic.	Total.
British.....	\$1.04	\$0.83	\$0.97
Chilean.....	1.37	4.93	1.99
Danish.....	.75	.89	.81
Dutch.....	1.01	.72	.81
French.....	2.41	.80	1.30
German.....	.76	1.03	.88
Italian.....	.68	8.49	1.09
Japanese.....	.79	.86	.82
Norwegian.....	.57	.72	.61
Peruvian.....	4.54	1.19	1.89
Swedish.....	.53		.53
United States.....	.85	.85	.85
Average rate for all vessels, June, 1922.....	.91	.85	.89
Average rate for all vessels, May, 1922.....	.82	.86	.84
Average rate for all vessels, June, 1921.....	1.11	.93	1.02

COMMODITY STATISTICS.

A classification of cargo passing through the Panama Canal during the month of June, 1922, has been compiled from declarations of cargo and manifests submitted by the ships' masters, and while incomplete, it is indicative of the kind and quantity of the various commodities carried by vessels transiting the Canal. From the cargo declarations and manifests submitted it was possible to classify by commodities 72 per cent of all cargo passing from the Atlantic to the Pacific and 92 per cent of all cargo passing from Pacific to Atlantic ports. A brief summary of the principal items is shown herewith, the figures representing tons of 2,240 pounds.

Commodity.	June, 1922.	May, 1922.	June, 1921.
Atlantic to Pacific.			
Manufactured goods:			
Iron and steel.....	134,947	195,005	60,923
Machinery.....	4,904	20,347	7,030
Railroad material.....	19,730	18,139	3,434
Textiles.....	5,812	13,360	964
Other manufactured goods.....	23,136	9,330	2,170
Oil:			
Crude petroleum.....	49,362	41,848	98,099
Refined.....	44,337	97,091	30,598
Coal.....	37,080	21,075	15,456
Metals:			
Tin.....	12,692	11,643	
Iron.....	12,487	3,323	3,113
Sulphur.....	11,450	12,373	11,700
Sugar.....	7,474	6,640	
Ore, iron.....	7,370	109	
Cotton, raw.....	4,893	3,995	11,997
Glass.....	3,437	6,122	1,604
Liquors.....	2,572	645	437
General and miscellaneous.....	204,644	212,353	112,060
Total, Atlantic to Pacific.....	586,377	673,398	359,584
Pacific to Atlantic.			
Lumber.....	82,727	96,637	31,402
Wheat.....	41,285	71,697	58,261
Oils:			
Refined.....	23,908	22,525	7,248
Crude.....	13,541	19,264	2
Lubricating.....	11,300		
Copper:			
Metal.....	19,505	15,148	9,525
Ore.....	10,834	9,245	1,030
Nitrate.....	24,043	29,565	58,801
Barley.....	17,909	18,411	18,932
Sugar.....	15,505	35,398	10,821
Canned goods:			
Fruit.....	9,721	5,707	4,931
Fish.....	4,303	5,639	3,647
Wool.....	8,051	14,147	4,623
Coffee.....	7,587	13,334	11,084
Flour.....	6,812	6,533	5,217
Beans, peas, lentils, etc.....	5,407	2,663	3,519
Cotton.....	4,996	3,760	1,141
Cacao.....	3,451	7,590	3,889
Miscellaneous and general.....	80,216	107,846	101,063
Total, Pacific to Atlantic.....	391,101	485,109	335,136

TRAFFIC BY NATIONALITY.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
From Atlantic to Pacific.							
British	47	178,556	220,197	279,900	179,972	\$211,499.70	183,289
Chilean	2	4,029	5,598	8,690	4,614	5,036.25	3,688
Danish	3	8,081	10,929	11,757	7,341	10,035.75	13,412
Dutch	3	9,946	13,087	15,679	9,851	12,432.50	12,366
French	3	10,634	11,201	15,392	9,791	12,966.00	5,376
German	2	5,528	6,886	8,926	5,562	6,910.00	9,029
Italian	1	4,025	4,049	5,400	3,319	4,858.80	7,154
Japanese	5	20,966	22,764	30,104	20,652	25,840.60	32,739
Mexican	1	786	952	1,462	892	685.44	
Norwegian	5	17,676	24,160	28,639	17,727	22,095.00	38,456
Peruvian	3	4,225	8,293	13,764	7,190	5,281.25	1,163
Spanish	1	3,031	3,437	4,648	2,877	2,503.44	40
Swedish	2	4,478	6,580	8,609	5,676	5,597.50	10,572
United States	57	204,144	256,060	319,112	203,827	245,419.13	269,093
Totals, June, 1922	135	476,105	594,196	752,082	479,291	571,161.36	586,377
Totals, May, 1922	134	472,852	594,713	742,419	467,705	578,433.82	673,398
Totals, June, 1921	103	336,515	415,302	520,884	331,420	416,543.07	359,584
From Pacific to Atlantic.							
British	25	71,124	82,896	111,335	69,196	\$82,440.47	85,186
Chilean	2	3,086	5,338	6,527	3,905	3,857.50	782
Danish	2	7,501	9,357	11,869	7,584	9,376.25	10,514
Dutch	4	15,035	21,071	24,157	15,006	18,793.75	26,156
French	2	7,957	8,529	11,721	7,455	9,774.35	12,161
German	2	5,570	6,474	8,984	5,629	6,962.50	6,758
Italian	1	2,718	3,773	4,680	2,850	3,397.50	400
Japanese	3	13,762	16,857	21,813	13,486	17,202.50	19,936
Norwegian	3	7,957	8,811	11,269	7,828	9,670.30	13,401
Panama	1	52	52	79	52	39.00	
Peruvian	3	4,225	8,296	13,764	7,190	5,281.25	4,434
United States	45	158,706	205,063	249,758	156,938	194,333.69	211,373
Totals, June, 1922	93	297,693	376,517	475,956	297,119	361,129.06	391,101
Totals, May, 1922	109	355,831	438,103	555,134	354,585	436,623.55	485,109
Totals, June, 1921	89	277,379	346,175	439,973	279,071	335,421.05	335,136
Total traffic.							
British	72	249,680	303,093	391,235	249,168	\$293,940.17	268,475
Chilean	4	7,115	10,936	15,217	8,519	8,893.75	4,470
Danish	5	15,582	20,286	23,626	14,925	19,412.00	23,926
Dutch	7	24,981	34,158	39,836	24,857	31,226.25	38,522
French	5	18,591	19,730	27,113	17,246	22,740.35	17,537
German	4	11,098	13,360	17,910	11,191	13,872.50	15,787
Italian	2	6,743	7,822	10,080	6,169	8,256.30	7,554
Japanese	8	34,728	39,621	51,917	34,138	43,043.10	52,675
Mexican	1	786	952	1,462	892	685.44	
Norwegian	8	25,633	32,971	39,908	25,555	31,765.30	51,857
Panama	1	52	52	79	52	39.00	
Peruvian	6	8,450	16,592	27,528	14,380	10,562.50	5,597
Spanish	1	3,031	3,437	4,648	2,877	2,503.44	40
Swedish	2	4,478	6,580	8,609	5,676	5,597.50	10,572
United States	102	362,850	461,123	568,870	360,765	439,752.82	480,466
Totals, June, 1922	228	773,798	970,713	1,228,038	776,410	932,290.42	977,478
Totals, May, 1922	243	828,683	1,032,816	1,297,553	822,290	1,015,057.37	1,158,507
Totals, June, 1921	192	613,894	761,477	960,857	610,491	751,964.12	674,720

LATIN-AMERICAN TRAFFIC.

ATLANTIC TO PACIFIC.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
British	21	56,830	70,600	93,352	57,630	\$68,949.27	63,328
United States	17	59,115	69,510	91,289	58,329	64,939.10	52,602
Danish	3	8,081	10,929	11,757	7,341	10,035.75	13,412
German	2	5,528	6,886	8,926	5,562	6,910.00	9,029

ATLANTIC TO PACIFIC—continued.

Nationality.	No. of ships.	TONNAGE.				Tolls.	Tons of cargo.
		United States equivalent.	Panama Canal net.	Registered.			
				Gross.	Net.		
French.....	2	5,755	6,242	8,718	5,561	\$7,015.20	3,474
Peruvian.....	3	4,225	8,296	13,764	7,190	5,281.25	1,163
Chilean.....	2	4,029	5,598	8,690	4,614	5,036.25	3,688
Japanese.....	1	3,590	4,101	5,760	3,548	4,487.50	5,064
Swedish.....	1	1,349	1,458	2,316	1,630	1,686.25	2,168
Dutch.....	1	2,290	3,660	3,689	2,291	2,862.50	3,028
Spanish.....	1	3,031	3,437	4,648	2,877	2,503.44	40
Mexican.....	1	786	952	1,462	892	685.44	.....
Totals, June, 1922.....	55	154,609	191,669	254,371	157,465	180,392.04	156,996
Totals, May, 1922.....	50	130,383	166,380	208,319	133,295	152,726.17	140,255
Totals, June, 1921.....	53	117,044	149,446	190,457	117,636	142,071.96	129,973

PACIFIC TO ATLANTIC.

British.....	19	47,915	54,607	68,655	45,860	\$53,429.22	43,467
United States.....	11	28,772	36,267	46,111	29,305	34,057.84	29,766
Norwegian.....	3	7,957	8,811	11,269	7,828	9,670.30	13,401
Peruvian.....	3	4,225	8,296	13,764	7,190	5,281.25	4,434
German.....	2	5,570	6,474	8,984	5,629	6,962.50	6,758
Dutch.....	2	4,399	7,452	7,107	4,396	5,498.75	7,627
Chilean.....	2	3,086	5,338	6,527	3,905	3,857.50	782
Danish.....	1	4,257	5,341	6,650	4,247	5,321.25	4,570
Italian.....	1	2,718	3,773	4,680	2,850	3,397.50	400
Totals, June, 1922.....	44	108,899	136,359	173,747	111,210	127,476.11	111,205
Totals, May, 1922.....	50	119,900	151,741	196,681	121,404	141,732.10	150,435
Totals, June, 1921.....	48	101,952	133,379	173,595	105,412	117,073.95	112,823

A further classification of commercial traffic is shown below:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
Cargo-carrying vessels:						
Laden.....	123	538,820	\$530,256.54	85	343,609	\$337,024.99
Ballast.....	10	54,024	39,522.63	6	31,981	23,026.32
Cable ship.....	1	875	1,038.75	1	875	1,038.75
Yacht.....	1	477	343.44	.....	.....	.....
Launch.....	.....	.....	.....	1	52	39.00
Totals.....	135	594,196	571,161.36	93	376,517	361,129.06
Steamships.....	126	572,447	553,497.77	87	366,089	350,517.56
Motor ships.....	2	10,783	7,873.75	2	9,357	9,376.25
Motor schooners.....	2	144	157.50	2	144	157.50
Barges.....	2	6,878	5,139.75	.....	.....	.....
Bark.....	1	2,592	3,110.40	.....	.....	.....
Cable ship.....	1	875	1,038.75	1	875	1,038.75
Yacht.....	1	477	343.44	.....	.....	.....
Launch.....	.....	.....	.....	1	52	39.00
Totals.....	135	594,196	571,161.36	93	376,517	361,129.06

VESSELS WITHOUT CARGO.

The number of ships without cargo transiting the Canal, exclusive of warships and other noncargo-carrying vessels, is shown in the following tabulation:

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
British.....	5	28,841	\$20,948.31	3	16,301	\$11,736.72
Mexican.....	1	952	685.44	.....	.....	.....
Spanish.....	1	3,437	2,503.44	.....	.....	.....
United States.....	3	20,794	15,385.44	3	15,680	11,289.60
Totals.....	10	54,024	39,522.63	6	31,981	23,026.32

NONCOMMERCIAL TRAFFIC.

The following statement shows the tonnage of and amount of cargo carried by vessels transiting the Panama Canal free of tolls during the past month. If tolls had been assessed against these vessels at commercial rates, the amounts paid would have been approximately as indicated.

The statement also shows the number and tonnage of small launches and miscellaneous nonseagoing craft transiting the Canal; these, although paying tolls, are not included in the commercial traffic.

	Atlantic to Pacific.			Pacific to Atlantic.		
	No. of ships.	Panama Canal net tonnage.	Tolls.	No. of ships.	Panama Canal net tonnage.	Tolls.
U. S. naval vessels:						
Battleships.....	3	¹ 61,825	\$30,912.50	3	¹ 61,825	(²)
Cruisers.....	4	¹ 16,665	8,332.50	3	¹ 13,465	² \$3,200.00
Transport.....	1	¹ 5,212	4,885.00	1	¹ 4,908	4,885.00
Tug.....	1	¹ 750	375.00	1	¹ 750	375.00
Barge.....	1	¹ 1,035	517.50			
U. S. Army transports.....	4	¹ 17,057	20,335.00	1	¹ 4,331	3,248.25
U. S. Coast Guard cutter.....	1	¹ 192	144.00			
Launches, etc.....	4	¹ 10	10.20			
Totals.....	19		65,511.70	9		12,308.25

¹ Displacement tonnage. ² Three battleships and 1 cruiser proceeded only as far as Gatun Lake, then returned to Atlantic seaboard; commercial vessels under similar conditions would be required to pay tolls in one direction only.

³ Registered net tonnage. ⁴ Panama Canal net tonnage.

The vessels listed above, as transiting the Canal free of tolls, carried cargo as follows:

Atlantic to Pacific ports.....	Tons.
Pacific to Atlantic ports.....	13,807
	336

STATEMENT OF TERMINAL OPERATIONS.

Details of the business transacted at the Atlantic and Pacific terminals of the Panama Canal during the month of June, 1922, are shown in the following tabulations:

	Cristobal.	Balboa.	Total.
Local cargo arriving..... tons..	16,643	19,336	35,979
Local cargo shipped..... tons..	2,149	396	2,545
Transit cargo arriving..... tons..	999,627	999,977	1,999,604
Transit cargo clearing..... tons..	978,990	1,000,386	1,979,376
Cargo received for transshipment..... tons..	22,331	190	22,521
Cargo transshipped..... tons..	21,421	455	21,876
Vessels supplied with bunker coal:			
Commercial, other than Panama Railroad.....	37	9	46
Panama Railroad vessels.....	2		2
U. S. Army vessels.....	1	1	2
Total vessels supplied with coal.....	40	10	50
Coal supplied to above vessels:			
Commercial, other than Panama Railroad..... tons..	10,665	3,019	13,684
Panama Railroad vessels..... tons..	1,099		1,099
U. S. Army vessels..... tons..	5	34	39
Total coal supplied to vessels..... tons..	11,769	3,053	14,822
Coal issues, miscellaneous:			
Panama Canal departments..... tons..	166	115	281
Panama Railroad Company, excepting vessels..... tons..		12	12
U. S. Army, excepting vessels..... tons..	819		819
Individuals and companies..... tons..	296		296
Total coal issues from Panama Canal deposits:			
June, 1922..... tons..	13,050	3,180	16,230
May, 1922..... tons..	11,664	3,067	14,731
June, 1921..... tons..	21,225	4,306	25,531
Coal on hand July 1, 1922..... tons..	134,260	10,947	145,207
Coal on hand, June 1, 1922..... tons..	128,208	14,127	142,335
Coal received during the month..... tons..	19,102		19,102

	Cristobal.	Balboa.	Total.
Fuel oil issues:			
Panama Canal departments..... bbls.	5,583	17,644	23,227
Panama Railroad Company..... bbls.	305		305
Army and Navy..... bbls.	1,196	161	1,357
Individuals and companies..... bbls.		157	157
Total issues and sales..... bbls.	7,084	17,962	25,046
Fuel oil on hand, July 1, 1922..... bbls.	20,415	93,356	113,771
Fuel oil on hand, June 1, 1922..... bbls.	26,345	44,928	71,273
Fuel oil received during June..... bbls.		64,904	64,904
Taken up on inventory during month..... bbls.	1,154	1,486	2,640
Diesel oil issued during June..... bbls.	179		179
Dropped on inventory during month..... bbls.	62	8	70
Diesel oil on hand, July 1, 1922..... bbls.	50,282	887	51,169
Diesel oil on hand, June 1, 1922..... bbls.	50,523	895	51,418
Oil pumped for individuals and companies..... bbls.	334,724	86,760	421,484
Miscellaneous transfers..... bbls.	5,970	4,208	10,178
Total oil handled..... bbls.	347,957	173,834	521,791
Admeasurement certificates:			
U. S. equivalent issued or made.....	25	7	32
Measured for Panama Canal net tonnage.....	2	3	5
Remeasured for Panama Canal net tonnage.....	19	2	21
Panama Canal net tonnage corrected.....	15	4	19
U. S. equivalent tonnage corrected.....	15	8	23
Services of harbor equipment:			
Tugs, total operating hours.....	424	211	635
Launches, total operating hours.....	1,134	965	2,099
Scows, total operating hours.....		63	63
Vessels repaired at Panama Canal shops:			
Commercial.....	35	18	53
Government.....	5	4	9
Canal equipment.....	9	15	24
Vessels dry-docked:			
Commercial.....	1	2	3
Government.....	1	1	2
Canal equipment.....	5		5
Clearances issued.....	124	146	270
Bills of health issued.....	123	147	270

ALL VESSELS ENTERING AND CLEARING CANAL PORTS.

The following statement shows the number and tonnage of all vessels entering and clearing the terminal ports of the Canal during June, 1922.

	Port of Cristobal.			Port of Balboa.		
	No. of ships.	Registered gross.	Registered net.	No. of ships.	Registered gross.	Registered net.
Ships entering.						
All vessels, including those transiting Canal..	279	1,572,233	1,013,255	241	1,296,201	816,079
Vessels entering the port but not transiting Canal.....	49	289,379	201,700	10	39,513	24,697
Vessels transiting Canal and handling passengers or cargo.....	55	254,096	152,576	45	188,110	113,303
Ships clearing.						
All vessels, including those transiting Canal..	271	1,532,672	987,582	242	1,303,836	820,753
Vessels entering the port but not transiting Canal.....	49	282,468	196,173	10	38,167	23,704
Vessels transiting Canal and handling passengers or cargo.....	51	241,335	144,910	45	188,110	113,303

MOVEMENT OF PASSENGERS.

The following statement shows the number of passengers arriving and embarking at Canal ports during the month of June, 1922:

	At Cristobal.			At Balboa.		
	First class.	Others.	Total.	First class.	Others.	Total.
Disembarking:						
From Atlantic ports.....	729	634	1,383	8	4	12
From Pacific ports.....	177	45	222	239	43	282
Total disembarking.....	906	699	1,605	247	47	294
Embarking:						
For Atlantic ports.....	1,073	1,180	2,353	2	12	14
For Pacific ports.....	173	69	242	54	66	120
Total embarking.....	1,346	1,249	2,595	56	78	134
Remaining on board vessels:						
From Atlantic to Pacific ports.....	779	1,274	2,053	815	1,315	2,130
From Pacific to Atlantic ports.....	664	971	1,635	839	1,014	1,853
From Atlantic to Atlantic ports.....	264	147	411			
From Pacific to Pacific ports.....				49	443	492
Total remaining on board.....	1,707	2,392	4,099	1,703	2,772	4,475
Total passengers arriving.....	2,613	3,091	5,704	1,950	2,819	4,769
Total passengers departing.....	3,053	3,641	6,694	1,759	2,850	4,609

COMMISSARY SALES TO VESSELS.

The following is an itemized statement of commissary sales to all vessels during the month of June, 1922:

	Ice.	Groceries.	Cold storage.	Laundry.	Miscellaneous.	Total.
Sales at Cristobal to:						
U. S. Government vessels..	\$261.39	\$690.25	\$21,159.20		\$2,610.18	\$24,721.02
Panama Railroad vessels...	67.50	1,152.30	5,899.14		933.82	8,052.76
Other commercial vessels..	911.26	2,431.83	11,595.19	\$355.54	541.25	15,835.07
Total sales, June, 1922.	1,240.15	4,274.38	38,653.53	355.54	4,085.25	48,608.85
Total sales, May, 1922.	1,260.61	2,703.03	17,167.87		1,251.01	22,382.52
Total sales, June, 1921.	3,453.98	5,620.98	30,140.67	5,920.68	1,925.54	47,070.85
Sales at Balboa to:						
U. S. Government vessels..	104.92	2,076.10	6,684.17		192.29	9,057.48
Commercial vessels.....	256.89	837.51	5,560.81	1,454.18	608.13	8,717.54
Total sales, June, 1922.	361.81	2,913.61	12,244.98	1,454.18	800.44	17,775.02
Total sales, May, 1922.	519.56	1,656.64	6,911.98	446.97	626.77	10,161.92
Total sales, June, 1921.	1,065.85	12,944.78	22,756.14	94.09	2,546.57	39,407.43

LOCK OPERATION.

The following tabulations show the number of lockages, number of vessels passing through the locks, and the consumption of water for lockages, for the month of June, 1922, as compared with the preceding month, and the corresponding month of last year:

NUMBER OF LOCKAGES.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	89	127	216	12	15	27	243
Pedro Miguel.....	89	131	220	13	20	33	253
Miraflores.....	90	131	221	14	19	33	254
Total lockages, June, 1922.....	268	389	657	39	54	93	750
Total lockages, May, 1922.....	318	387	705	37	31	68	773
Total lockages, June, 1921.....	263	312	575	36	49	85	660

NUMBER OF VESSELS PUT THROUGH LOCKS.

	Commercial.			Noncommercial.			Grand total.
	North.	South.	Total.	North.	South.	Total.	
Gatun.....	97	136	233	21	28	49	282
Pedro Miguel.....	91	131	222	27	30	57	279
Miraflores.....	91	131	222	26	30	56	178
Total vessels, June, 1922.....	279	398	677	74	88	162	839
Total vessels, May, 1922.....	334	404	738	62	70	132	870
Total vessels, June, 1921.....	271	326	597	82	119	201	798

CLASSIFICATION OF NONCOMMERCIAL VESSELS.

	Gatun.	Pedro Miguel.	Miraflores.
Army and Navy vessels.....	25	17	21
Canal equipment.....	24	40	35

The total consumption of water for lockage, maintenance, and loss in leakage, was as follows:

	Gatun.	Pedro Miguel.	Miraflores.
	<i>Cubic feet.</i>	<i>Cubic feet.</i>	<i>Cubic feet.</i>
Lockages.....	925,450,000	844,140,000	735,210,000
Leakage.....	20,000,000	17,712,000	20,000,000
Total consumption, June, 1922.....	945,450,000	861,852,000	755,210,000
Total consumption, May, 1922.....	1,005,460,000	908,290,000	876,700,000
Total consumption, June, 1921.....	778,640,000	690,620,000	754,580,000

METEOROLOGY AND HYDROGRAPHY.

In the following tabulation the meteorological and hydrographic conditions over the Canal Zone and vicinity during the month of June, 1922, are shown in comparative form:

Rainfall.	June, 1922.	June, 1921.	June—Years of record.		
			Maximum.	Minimum.	Mean.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
Total rainfall for month:					
Pacific Section.....	8.14	8.29	13.26	4.18	8.25
Central Section.....	10.53	10.69	12.48	6.90	10.46
Atlantic Section.....	9.88	15.52	17.49	8.99	13.70
Over Gatun Lake watershed.....	10.30	13.01	15.16	7.89	11.38
Over Chagres River watershed above Alhajuela.....	12.56	14.69	18.02	7.47	13.20
Maximum recorded for month at any one point.....	18.79	19.67	22.00		
Minimum recorded for month at any one point.....	4.79	4.87		2.37	
Maximum recorded on any one day.....	3.47	4.32	10.86		
<i>Hydrography.</i>					
	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>	<i>C. f. s.</i>
Discharge of Chagres River at Alhajuela.....	2,723	2,124	4,870	1,363	2,559
Maximum momentary discharge for month.....	16,100	13,400	170,000		
Gatun Lake watershed total yield.....	6,203	5,665	7,895	4,477	6,194
Gatun Lake watershed net yield.....	5,740	5,175	7,176	4,081	5,690
Draft on Gatun Lake for lockages and power.....	2,004	2,140	2,140	1,138	1,774

¹ Maximum 24-hour rainfall recorded on the Isthmus since American occupation. Recorded at Porto Bello, December 28-29, 1909. ² Maximum momentary discharge of record; occurred December 26, 1909. ³ Not including June, 1914.

SEISMOLOGY.

Slight seismic tremors were recorded on the 11th and 25th of the month.

ELECTRICAL DIVISION.

POWER AND WORK.

The gross output of the Gatun hydroelectric station and of the Miraflores steam plant, the power distributed to consumers, the loss of power in transmission, etc., are shown in the following tabulation:

	June, 1922.	May, 1922.	June, 1921.
Gross output, K. W. H.:			
Gatun hydroelectric station.....	4,243,800	4,402,100	5,294,900
Miraflores steam plant.....	2,140	630	7,750
Power distributed to consumers.....KWH	3,592,053	3,712,543	4,404,350
Loss of power in plant auxiliaries, transmission, and transformation.....KWH..	654,887	690,187	898,300
Per cent of loss of power to gross output.....	15.42	15.67	16.94
Water consumption.....cubicfeet..	3,425,116,580	3,535,378,065	4,108,884,000
Oil consumption.....barrels..	1,980	1,925	1,990

Miscellaneous electrical repairs and installations of electrical equipment were made on 12 vessels during the month. There were 307 work orders issued for work to be performed by the Electrical Division during the month, as compared with 298 for May, 1922.

SHOP, FOUNDRY, AND DRY DOCK WORK.

During the month miscellaneous repairs were made on 49 vessels at Cristobal and 35 vessels at Balboa. Of these, 7 were placed in dry dock at Cristobal and 3 at Balboa. The more important repair work performed was as follows:

The steamer *Nordfarer* which took a sheer in the Canal and collided with barge No. 137 was placed in dry dock, her stem removed, straightened and replaced, and work well advanced on rebuilding her bow, as well as the renewal of several plates in her hull found deteriorated, and replacing her damaged propeller with a spare. As the vessel was old (built in 1898) it was required that she remove two-thirds of her cargo before it was considered safe to dock her.

Extensive repairs were carried out on the cable ship *Guardian*, the largest job being a complete overhaul of her machinery for paying out and reeling in telegraph cable.

Conversion of the wrecking tug *Favorite* from coal to oil burning was completed during the month. Oil tanks, replacing the coal bunkers, were built as an integral part of her structure of sufficient capacity for 24 days' steaming consumption. The propeller shaft and stern tube, which were built for fresh water cruising, were altered to admit of operation in salt water without deterioration, the condenser was retubed, various repairs made to auxiliary machinery, minor alterations made in living quarters, and the hull structure repaired where required. Dock trials were held on June 27, and on June 29 the vessel left the Balboa plant for routine service.

The alterations and repairs to dredge No. 86 were completed during the month and the dredge returned to service.

The output of the foundry in patterns and castings for the month of June was as follows:

	May, 1922.			June, 1922.		
	Patterns.	Castings.	Pounds.	Patterns.	Castings.	Pounds.
Iron.....	3	243	9,815	7	74	5,334
Steel.....	1	14	29,246	4	47	26,099
Nonferrous.....	4	326	6,069	9	249	3,930

The following is a statement of all job and blanket orders issued and completed during the month:

	Uncompleted, June 1.	Authorized in June.	Completed in June.	Uncompleted, June 30.
Job orders.....	277	372	376	273
Blanket orders.....	350	14	17	347

DREDGING DIVISION.

On June 3 a general movement occurred over East Culebra causing considerable material to move into the basin, and since that date both East and West Culebra

slides have shown intermittent movements. Cucaracha and Barge Repair slides have shown no movement during the month. There was no interference with Canal traffic during the month from slides.

The total excavation for June, including earth and rock, was 296,550 cubic yards, as follows:

Cubic yards.	Classified as—		Character of work.	Stations.	Equipmen
	Earth.	Rock.			
49,200	12,300	36,900	Maintenance.....	<i>Gaillard Cut.</i> 1647-00 to 1662-25 E.....	<i>Paraiso.</i>
53,850	24,250	29,600	Maintenance.....	1778-00 to 1788-00 E (East Culebra).....	<i>Paraiso.</i>
9,900	7,600	2,300	Maintenance.....	1774-70 to 1781-00 E. (East Culebra).....	<i>Gamboa.</i>
14,300	2,300	12,000	Maintenance.....	<i>Pacific Entrance, Miraflores P. I.</i> 2089-85 to 2100-50 W.....	<i>Cascadas.</i>
20,300	6,300	14,000	Maintenance.....	<i>Pacific Entrance.</i> 2120-00 to 2107-00 W.....	<i>Cascadas.</i>
115,000	115,000		Maintenance.....	2144-00 to 2155-00 W.....	<i>No. 83.</i>
34,000	34,000		Maintenance.....	2139-90 to 2146-50 W.....	<i>No. 84.</i>
296,550	201,750	94,800			

The material excavated at the various stations was disposed of as follows:

	Cubic yards.
Dumped north of Gamboa.....	112,950
Dumped on flats, west of Canal, Pacific entrance.....	149,000
Dumped at sea, Pacific entrance.....	34,600
Total.....	296,550

MUNICIPAL ENGINEERING.

The total output of all pumping stations and of the 3 filtration plants, the amount of water consumed by the cities of Panama and Colon, and sales of water to vessels are shown below in comparative form.

	June, 1922.	May, 1922.	June, 1921.
	<i>Gallons.</i>	<i>Gallons.</i>	<i>Gallons.</i>
Pumping stations.....	618,618,000	654,853,000	703,156,500
Filtration plants.....	363,414,000	379,450,000	431,750,000
Water consumed by Panama City.....	82,009,000	85,936,000	94,137,000
Water consumed by Colon.....	59,893,500	62,468,500	57,934,250
Sales of water to vessels.....	9,299,864	8,493,096	10,039,282

VITAL STATISTICS.

A total of 145 deaths occurred during the month of June, 1922, among the population of the Canal Zone and the cities of Panama and Colon, which is equivalent to the annual death rate of 14.33 per thousand. The 3 leading causes of death were tuberculosis, pneumonia, and nephritis (acute and chronic); these 3 diseases caused 35 per cent of all deaths from disease. There was 1 death from malaria, 1 from dysentery, and 1 from typhoid fever. Of the total deaths, 48, or 33 per cent, occurred among children under 5 years of age. There were 12 deaths among nonresidents of the Isthmus; these are not included in the above statistics.

There were 295 live births reported during the month, and 19 stillbirths. Including stillbirths, this is equivalent to an annual birth rate of 31.03 per thousand population. Deaths among children under 1 year of age numbered 30, giving an infant mortality rate, based on the number of births reported for June, of 101.69 per thousand live births.

Two hundred and eleven cases of malaria were reported from the Zone and terminal cities during the month, of which 19 were employees, 134 were Army and Navy personnel and 58 nonemployees. These malaria cases originated as follows: Colon, 7; Panama 14; Canal Zone, 190.

No smallpox or other serious epidemic diseases were reported during the month.

SCHOOLS.

The school year closed at the end of the month. There were 23 graduates from the high schools, 13 from Balboa and 10 from Cristobal. Of the 77 American teachers, 14 resigned at the end of the school year, and the remaining teachers were granted 92 days leave of absence without pay.

The following brief summary shows the enrollment, average attendance, etc., in the white and colored schools of the Canal Zone for the month of June:

	White.	Colored.	Total.
Gross enrollment.....	2,080	1,859	3,939
Net enrollment.....	1,897	1,809	3,706
Average daily attendance.....	1,460	1,313	2,773
*Pupils neither absent nor tardy.....	735	506	1,241
Number of cases of tardiness.....	336	29	365
Number of teachers.....	77	32	109

OCCUPANTS OF QUARTERS.

Occupants of Panama Canal and Panama Railroad quarters, shown in comparative form, were as follows:

	As of June 30, 1922.				Total occupants.	
	Men.	Women.	Children.	Total.	May, 1922.	June, 1921.
Americans.....	2,222	1,728	1,883	5,833	6,239	7,525
Europeans.....	92	41	92	225	244	213
West Indians.....	3,936	2,592	5,650	12,178	12,142	12,602
Totals, June, 1922.....	6,250	4,361	7,625	18,236		
Totals, May, 1922.....	6,360	4,492	7,773		18,625	
Totals, June, 1921.....	8,008	4,686	7,646			20,340

WORKING FORCE—NUMBER OF EMPLOYEES.

The following tabulation shows the number of gold and silver employees as of June 21, 1922, by departments, together with a comparison of the working force for the preceding month and that of June, 1921:

	Employees as of June 21, 1922.			Total employees.	
	Gold.	Silver.	Total.	May, 1922.	June, 1921.
Operation and Maintenance:					
Office.....	28	37	65	85	81
Electrical.....	141	152	293	307	413
Municipal Engineering.....	71	664	735	566	850
Lock operation.....	163	530	693	726	732
Dredging.....	130	597	727	723	922
Mechanical.....	319	553	872	871	1,645
Marine.....	154	360	514	518	709
Fortifications.....	39	234	273	295	242
Totals.....	1,045	3,127	4,172	4,091	5,594
Supply Department:					
Transportation.....	32	147	179	170	
Quartermaster.....	139	897	1,036	967	1,743
Subsistence.....	6	79	85	81	232
Commissary.....	164	742	906	910	1,405
Cattle Industry—Plantations.....	6	133	139	392	173
Hotel Washington.....	9	83	92	92	91
Totals.....	356	2,081	2,437	2,612	3,754
Accounting Department.....	180	7	187	183	231
Health Department.....	211	705	916	942	1,093
Executive Department.....	499	243	742	744	822
Totals.....	890	955	1,845	1,869	2,150
Panama Railroad:					
Superintendent.....	46	221	267	255	303
Transportation.....	67	99	166	166	219
Receiving and Forwarding Agency.....	64	625	689	783	753
Coaling Stations.....	85	515	600	496	678
Totals.....	262	1,460	1,722	1,700	2,043
Grand totals, June, 1922.....	2,553	7,623	10,176		
Grand totals, May, 1922.....	2,507	7,715		10,272	
Grand totals, June, 1921.....	3,506	10,035			13,541

* The number of employees, as shown above, is the smallest force employed on the Canal since the middle of 1905.

RECEIPTS AND SALES OF MATERIALS AND SUPPLIES.

The total value of material ordered on United States requisitions and received on the Isthmus during the month, sales to steamships from storehouses, cash sales from stock, etc., are shown below in comparative form:

	June, 1922.	May, 1922.	June, 1921.
Material received on United States requisitions, chargeable as follows:			
Operation and maintenance.....	\$102,181.89	\$141,414.67	\$398,824.99
Construction and equipment.....			7,743.71
Miscellaneous.....	1,968.95	1,642.87	18,099.09
Totals.....	104,150.84	143,057.54	424,667.79
Cash sales on the Isthmus:			
Stock.....	21,233.14	20,772.75	29,560.31
Fuel oil.....	1,187.98	305.85	66.47
Scrap.....	613.26	769.24	609.39
Obsolete and second-hand material.....	2,656.92	3,528.02	3,756.51
Totals.....	25,691.30	25,375.66	33,992.68
Sales to steamships from storehouses.....	7,228.41	6,007.31	13,361.82

Respectfully,

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended July 22:

Steamship *Eclipse*, calk leaky rivets and seams in domestic tank, above starboard boiler.

PREVIOUSLY REPORTED.

Dredge *Paraiso*, work for widening hull is going along; in addition, miscellaneous running repairs to hull and engines.

The following vessels were at the Cristobal shops for repairs during the week ended July 24:

Steamships *Conde de Churruca*, manufacture studs and spring washers; *La Navarre*, repair copper pipes; manufacture 2 nuts and bolts as sample, also 1 valve stem and valve; subchasers *Nos. 1 and 2*, dock, clean, and scrape bottom; repair copper sheathing; remove propellers, tail shaft, struts, strainers, and plug all holes below water line and cover with copper sheathing; cut out bulkheads as directed; steamships *Roman Star*, remove salt from back connections and tubes of boiler; weld 8 feet of calking edge and 19 stay bolts in center furnace; weld 1 staybolt in inboard furnace and calk staybolts; calk 4 staybolts in outboard furnace; test boiler and make repairs that develop; renew pipe from sea inlet; manufacture 2 piston rings for ballast pump; *Palena*, electric weld boiler; *Turrialba*, repair sanitary pipe in fireroom; *Ansaldo San Giorgio I*, remove loose rivets below water line and install patch bolts; *General W. C. Gorgas*, bore out spur gear and fit to winch shaft.

Notice to Mariners.—Menace to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 19, 1922.

From U. S. S. *Sciota*, July 18, 3 p. m.:

Latitude 7° 7' 15" North, Longitude 81° 2' 8" West, passed a log 12 feet long and 16 inches in diameter. Menace to navigation.

JAY J. MORROW,
Governor.

Postal and Cable Addresses of The Panama Canal.

The postal address is "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

MOVEMENTS OF OCEAN VESSELS. *Week ending at midnight, July 22, 1922.*

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.
	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	
Norman Mon-	16	6 00	16	6 35	16	14 00	16	15 18	British.	400.0	52.0	17.6	Norfolk.	Ballast.		
arch	16	13 30	16	12 15	16	18 46	16	19 36	American.	404.0	53.0	28.9	Los Angeles.	General.	8,260	5,568
Santa Rosa	16	5 40	17	6 05	17	14 32	17	16 50	French.	410.0	52.0	16.6	New York.	Spirits, wine, etc	800	6,754
Mississippi.	16	5 40	17	6 05	17	14 32	17	16 50	American.	410.0	52.0	16.6	Bordeaux.	General.	800	6,942
Seaf.	17	4 05	17	6 10	17	14 32	17	16 50	British.	303.0	43.0	18.3	Cristobal.	General, coal.	2,177	2,844
Alvarado.	17	17 14	18	7 30	18	15 01	18	16 15	American.	500.0	68.0	23.6	New York.	Ballast.	11,224	7,860
W. S. Rheem.	18	8 55	18	9 10	18	16 24	20	19 48	British.	350.8	46.1	23.0	London.	Fuel oil.	5,058	4,336
Trophon.	18	8 55	18	9 10	18	16 24	20	19 48	British.	350.8	46.1	23.0	Tampico.	Petroleum.	7,788	7,653
Ramon Oulry	18	9 05	18	12 25	18	19 42	18	19 12	Norwegian.	451.4	58.2	26.5	Port Arthur.	General, sugar.	4,702	3,369
Duto.	18	6 40	18	12 25	18	19 42	18	19 12	Norwegian.	451.4	58.2	26.5	Philadelphia.	General.	9,765	8,293
Edlose.	14	4 00	19	6 25	19	14 04	22	15 35	American.	440.0	56.0	30.7	Otari.	General.	3,300	10,777
Port Adelaide	18	22 55	19	7 40	19	15 09	19	16 11	British.	481.2	62.3	23.0	New York.	Brisbane.	3,300	10,777
Hawaiian	19	4 35	19	8 05	19	15 58	19	17 00	American.	406.8	51.1	22.0	Philadelphia.	General.	4,273	6,039
City of Hono-	19	5 36	19	10 22	19	19 33	19	21 07	American.	523.0	60.1	23.0	Los Angeles.	Ballast.	12,641	8,559
lulu	19	7 27	19	12 00	19	20 26	19	21 54	American.	429.0	55.2	27.3	Vancouver.	General.	7,500	7,581
Melville Dollar.	14	16 30	19	12 00	19	21 17	19	22 52	Peruvian.	381.2	46.1	18.3	Callao.	General.	339	4,903
Urubamba.	19	6 20	19	13 15	19	22 01	19	23 45	British.	475.5	61.0	22.0	San Francisco.	General.	5,093	10,116
M. S. Dollar.	15	6 37	20	5 45	20	14 07	20	15 30	American.	285.0	44.8	19.6	Balboa.	Ballast.	2,550	2,979
Hippocampus.	15	6 37	20	5 45	20	14 07	20	15 30	American.	285.0	44.8	19.6	Los Angeles.	General.	2,550	2,979
Mount Baker	15	6 37	20	5 45	20	14 07	20	15 30	American.	285.0	44.8	19.6	Los Angeles.	General.	2,550	2,979
Chattanooga	19	17 10	20	7 00	20	14 51	20	18 15	American.	424.2	56.2	26.5	Seattle.	General.	8,598	7,611
City.	19	8 40	20	9 00	20	17 07	20	18 10	American.	468.3	62.7	27.0	Hongkong.	Fuel.	11,248	9,941
Empire Arrow.	19	7 30	20	12 37	20	18 12	21	13 40	American.	360.2	51.2	22.0	San Francisco.	General.	2,200	6,776
Santa Ana	14	21 34	21	6 22	20	13 51	21	16 50	British.	220.0	34.0	13.0	Champerico.	General.	803	1,187
Jamaica	20	19 05	21	7 37	21	14 56	21	16 09	American.	446.0	56.0	26.0	Los Angeles.	General.	5,000	8,508
F. J. Lucken-	21	1 33	22	6 20	22	13 53	22	15 55	British.	485.4	62.3	22.8	London.	General.	4,153	10,802
bach.	21	1 33	22	6 20	22	13 53	22	15 55	British.	485.4	62.3	22.8	Vancouver.	General.	4,153	10,802
Loebkatrine.	22	2 15	22	7 50	22	15 39	23	1 30	Norwegian.	395.5	53.0	27.2	Callao.	General.	1,089	1,496
Varg.	22	2 15	22	7 50	22	15 39	23	1 30	Norwegian.	395.5	53.0	27.2	Yokohama.	General.	8,150	6,841
Chickasaw City	22	2 15	22	7 50	22	15 39	23	1 30	Norwegian.	395.5	53.0	27.2	Yokohama.	General.	8,150	6,841
Canadian	22	6 00	22	8 50	22	16 26	22	17 35	British.	400.0	52.4	19.2	Montreal.	General.	5,911	5,956
Victor	22	6 15	22	9 32	22	17 25	22	18 25	British.	401.0	50.0	24.0	New York.	General.	5,169	5,673
Blenfontein	22	7 55	22	10 30	22	18 17	22	21 25	American.	381.0	49.9	23.0	Baltimore.	Structural steel.	3,562	5,825
Wabash	22	6 45	22	11 18	22	20 24	22	21 50	British.	440.8	56.0	26.6	Tampico.	Fuel oil.	9,490	7,693
Toro	21	22 54	22	12 05	22	20 04	22	21 50	British.	448.5	57.2	30.3	New York.	General.	8,300	9,139
Slavie Prince.	21	22 54	22	12 05	22	20 04	22	21 50	British.	448.5	57.2	30.3	New York.	General.	8,300	9,139

* Launch.

* Motor ship.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

15	Eric Maru.	15	18 50	16	6 56	16	14 18	16	14 18	16	14 18	Japanese.	Kawasaki Kisen Kaisha.	400 0	53 0	25 6	Vancouver.	Norfolk.	Wheat.	7,066	5,977	4,300
7	Birmingham.	7	10 20	16	8 36	16	16 20	9	04	American.	U. S. Navy.	420 0	47 0	19 8	Bahoa.	Cartagena.	General.	Wheat.	(s)			
14	U. S. Navy.	14	6 30	16	10 17	16	16 32	16	16 32	American.	U. S. Navy.	450 8	61 0	23 7	San Diego.	Hampton R ds	General, lumber.	General, lumber.	1,000	8,425	5,270	
15	Railroad.	15	19 20	16	11 25	16	18 05	16	18 05	British.	New Zealand Shipping Co.	480 6	60 3	24 10	Wellington.	London.	Cold storage.	Cold storage.	5,242	11,027	8,188	
16	Californian.	16	9 35	16	14 30	16	22 08	16	22 08	American.	American-Hawaiian Line.	445 1	59 8	20 6	Seattle.	Liverpool.	General.	General.	9,700	8,567	6,020	
16	Vancouver.	16	15 20	17	6 58	17	14 12	17	14 12	Japanese.	Kawasaki Kisen Kaisha.	385 0	51 0	26 6	Tacoma.	Norfolk.	Wheat.	Wheat.	7,506	5,919	4,389	
16	Mundella.	16	17 45	17	8 00	17	15 50	17	23 35	American.	Munson Line.	370 0	53 2	23 3	Grays Harbor.	New York.	Lumber.	Lumber.	5,000	5,665	4,297	
17	Julia Lucken-	17	16 10	17	8 20	17	15 47	17	15 47	American.	Luckenbach Line.	438 0	57 0	26 0	Seattle.	New York.	General, lumber.	General, lumber.	5,735	8,543	6,402	
17	Oregon Maru.	17	2 30	17	9 21	17	18 30	18	19 30	Japanese.	Kawasaki Kisen Kaisha.	385 0	51 0	26 0	Portland.	Cristobal.	Wheat.	Wheat.	7,683	9,251	4,700	
17	Potosi.	17	6 00	17	9 50	17	18 10	17	19 05	British.	Pacific Steam Navigation Co.	381 0	49 0	23 7	Coronel.	Liverpool.	General.	General.	4,578	5,539	4,201	
17	Meru Maru.	17	6 54	17	10 45	17	19 36	18	12 34	Japanese.	Meiji Kisen Kaisha.	445 0	58 0	23 8	Portland.	Hampton R ds	Wheat.	Wheat.	9,573	8,299	5,979	
17	Singapore Maru	17	8 00	17	11 27	17	20 35	17	21 38	Japanese.	Kawasaki Kisen Kaisha.	385 0	51 0	26 0	Portland.	Norfolk.	Wheat.	Wheat.	7,616	9,914	4,389	
17	Santa Eulalia.	17	10 50	17	12 50	17	21 55	18	6 00	Japanese.	American and Cuban S. S. Co.	251 0	43 6	27 0	San Luis.	Haitian.	Celite.	Celite.	1,137	2,823	1,730	
17	Canadian Con-	17	15 00	18	6 50	18	14 50	18	21 55	British.	Canadian Government.	430 0	56 2	19 6	Brisbane.	Montreal.	General.	General.	1,500	7,080	5,494	
17	structor.	17	20 50	18	10 15	18	18 32	18	22 10	American.	U. S. Shipping Board.	489 8	54 2	24 3	Valparaiso.	New York.	Nitrate.	Nitrate.	8,658	5,989	4,809	
18	West Jaifrey.	18	9 30	18	11 00	18	18 36	19	12 20	American.	U. S. Steel Products Co.	424 2	56 2	23 6	New Westmin-	New York.	General, lumber.	General, lumber.	6,800	7,611	5,450	
18	Montgomery	18	9 20	18	11 51	18	20 30	19	9 55	American.	Isthmian Steamship Lines.	424 2	56 2	25 10	Portland.	London.	General.	General.	8,047	7,611	5,450	
18	Idaho.	18	15 20	19	6 41	19	14 40	20	12 30	American.	American-Hawaiian Line.	407 7	53 7	24 1	Seattle.	Hamburg.	General.	General.	7,700	7,091	4,000	
18	Veronica.	18	17 00	19	7 41	19	15 45	19	15 45	Swedish.	Swedish Lloyds.	233 0	41 0	18 3	Talal.	New Orleans.	Nitrate.	Nitrate.	2,708	2,381	1,458	
18	Veronica.	18	23 42	19	7 35	19	16 30	19	22 11	American.	American and Cuban S. S. Co.	251 0	43 6	27 0	Marshfield.	New York.	Lumber.	Lumber.	2,000	2,822	1,740	
19	Errene Adriane.	19	6 30	19	9 44	19	17 30	19	19 31	British.	Rodenach & Sons.	348 5	50 1	21 0	Portland.	Rotterdam.	Wheat.	Wheat.	5,700	4,113	3,038	
19	Marore.	19	10 15	19	10 58	19	19 52	19	19 52	American.	Ore Steamship Corp.	550 3	72 2	33 0	Cruz Grande.	New York.	Iron ore.	Iron ore.	20,000	15,551	4,297	
20	Eastern Mer-	20	1 00	20	8 01	20	14 51	20	14 51	American.	Luckenbach Line.	445 0	58 0	25 6	Genoa Bay.	New York.	General.	General.	8,000	8,617	6,297	
20	chant	20	8 20	20	9 48	20	18 50	20	20 48	British.	Universal Steam Navigation Co.	374 0	48 0	24 0	Makatea Isl.	Algiers.	Phosphates.	Phosphates.	6,600	4,531	3,434	
20	Charles H.	20	9 15	20	10 38	20	17 54	21	12 35	American.	U. S. Shipping Board.	404 6	54 0	25 0	Seattle.	Baltimore.	General.	General.	5,900	6,755	4,750	
20	Kalamo.	20	10 30	20	12 42	20	19 55	20	22 15	British.	Ellerman & Bucknell.	400 0	52 0	25 6	San Francisco.	United King.	General.	General.	6,720	5,672	4,042	
20	Mineloa.	20	5 35	21	6 55	21	13 55	21	22 15	American.	Grace Line.	208 6	40 0	16 8	Paia.	New York.	General.	General.	1,583	2,835	1,805	
20	Edgemoor.	20	15 00	21	8 01	21	15 07	22	15 47	American.	U. S. Army.	409 6	54 2	16 5	Honolulu.	New York.	Ballast.	Ballast.	7,486	5,852	3,852	
20	Havo.	20	18 25	21	8 55	21	16 42	21	17 50	Norwegian.	Henrick Ostervoles	385 0	51 5	23 0	Portland.	Liverpool.	Wheat.	Wheat.	7,126	5,210	3,756	
20	Laurel Branch.	20	19 25	21	9 44	21	17 56	21	17 56	British.	F and W. Ritson.	360 2	46 0	22 6	Takahano.	New York.	General.	General.	5,109	4,182	2,047	
21	West Grey lock.	21	11 30	21	12 11	21	19 25	22	12 45	British.	U. S. Shipping Board.	430 1	54 3	28 0	Manila.	New York.	Sugar.	Sugar.	9,500	7,940	6,608	
21	Romanstar.	21	13 10	21	14 24	21	23 05	21	23 05	British.	Blue Star Line.	420 0	54 0	24 0	Hankow.	New York.	Cold storage, gen.	Cold storage, gen.	5,260	7,433	3,870	
21	San Francisco.	21	18 40	22	7 02	22	14 20	22	15 43	Swedish.	Johnson Line.	359 0	52 0	24 8	San Diego.	Stockholm.	General.	General.	5,960	5,298	4,019	
21	San Paena.	21	15 30	22	7 58	22	15 07	22	15 07	Chilean.	Chilian Line.	350 0	42 0	23 7	Takaluanu.	Cristobal.	General.	General.	919	3,666	2,577	
22	Moerdijk.	22	7 00	22	8 30	22	16 55	22	22 15	Dutch.	Holland-American Line.	472 8	61 0	24 6	Vancouver.	Antwerp.	General.	General.	9,456	9,165	7,067	
22	West Notus.	22	11 20	22	12 01	22	19 10	22	23 16	American.	U. S. Shipping Board.	410 0	54 3	20 6	San Francisco.	Buenos Aires.	General.	General.	2,656	6,583	4,914	

4,400 tons displacement.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

For orders.

U. S. Army transport.

MOVEMENTS OF OCEAN VESSELS.—Continued.

PORT OF CRISTOBAL.

*ARRIVALS.			*DEPARTURES.				
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 16.	Shenandoah	The Texas Co.	Puerto Lobos.	July 16.	Litopa.	Anglo-Saxon Petroleum Co.	Tampico.
July 16.	Abangarez	United Fruit Co.	New Orleans via Habana.	July 16.	Ulua.	United Fruit Co.	New York via Habana.
July 16.	Ulua.	United Fruit Co.	Port Limon.	July 16.	Eupatoria.	Hamburg-American Line.	Port Limon.
July 17.	Tolosa.	United Fruit Co.	New York via Habana.	July 17.	Oscar D. Bennett.	Pan-American Pet. & Transp. Co.	Tampico.
July 18.	La Navarre	French Line.	Havre via wayports.	July 17.	Abangarez.	United Fruit Co.	Bocas del Toro.
July 18.	Parismina.	United Fruit Co.	New Orleans via Port Limon.	July 19.	Shenandoah.	The Texas Co.	Puerto Lobos.
July 19.	Cantigny	U. S. Army.	New York via San Juan.	July 19.	Colon.	Panama Railroad Steamship Line.	New York via Haiti.
July 19.	Twives.	United Fruit Co.	New York via Kingston.	July 19.	Tolosa.	United Fruit Co.	New Orleans via Habana.
July 19.	Camden	United Fruit Co.	Tampico.	July 20.	Parismina.	United Fruit Co.	New Orleans via Tela and Habana.
July 19.	Carrillo	United Fruit Co.	Colombian ports.	July 20.	Twives.	United Fruit Co.	Colombian ports.
July 20.	Berlin	T. Nielsen.	Montreal via wayports.	July 20.	Carrillo.	United Fruit Co.	New York via Kingston.
July 20.	Abangarez	United Fruit Co.	Bocas del Toro.	July 20.	Abangarez.	United Fruit Co.	New Orleans.
July 22.	Camito.	Elders & Fyffes, Ltd.	Port Limon.	July 21.	Camden.	United Fruit Co.	Tampico.
				July 22.	Cantigny.	U. S. Army.	New York.
				July 22.	La Navarre.	French Line.	Puerto Colombia.
				July 22.	Camito.	Elders & Fyffes, Ltd.	Kingston.

PORT OF BALBOA.

July 17.	Baja California.	O. L. Lindvig.	Seattle.	July 18.	Baja California.	O. L. Lindvig.	Talara.
July 20.	Sinaloa.	O. L. Lindvig.	Talara.				

*Other than ships passing through the Canal.

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Cristobal for Week Ending July 22, 1922.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Ulua	United Fruit Co.	July 16.	July 16.	21	(²)
Mississippi	French Line	July 16.	July 17.	561	150
Abangares	United Fruit Co.	July 16.	July 17.	(¹)	61
Shenandoah	The Texas Co.	July 16.	July 19.	9,000	(²)
Alvarado	Pacific Steam Navigation Co.	July 17.	July 18.	128	253
Tolba	United Fruit Co.	July 18.	July 19.	364	181
Colon	Panama Railroad Steamship Line.	July 18.	July 19.		1,931
Urubamba	Peruvian Line	July 19.	July 19.		339
La Navarre	French Line	July 18.	July 22.	124	45
Parismina	United Fruit Co.	July 18.	July 20.	759	2
Camden	United Fruit Co.	July 19.	July 20.	8,870	(²)
Carrillo	United Fruit Co.	July 19.	July 20.	(¹)	¹ / ₄
Tivives	United Fruit Co.	July 19.	July 20.	62	49
Santa Ana	Pacific Mail Steamship Co.	July 19.	July 20.	198	282
Abangares	United Fruit Co.	July 20.	July 20.	(¹)	86
Mineola	Grace Line	July 21.	July 21.	67	(²)
Lockkatrine	Pacific Steam Navigation Co.	July 21.	July 22.	109	383
Jamaica	Pacific Steam Navigation Co.		July 21.		780
Palena	Chilean Line	July 22.		919	
Essequibo	Pacific Steam Navigation Co.	July 22.		280	
Camito	Elders & Fyffes, Ltd.	July 22.	July 22.	15	(²)

* No cargo discharged.

* No cargo laded.

**Report of Cargo Discharged and Laded by Vessels Entering and Clearing
from Port of Balboa for Two Weeks Ending July 22, 1922.**

Name of vessel.	Line or charterer.	Arrived.	Departed.	Cargo—	
				Discharged	Laded.
				<i>Tons.</i>	<i>Tons.</i>
Lake Fisher	U. S. Shipping Board	July 9.	July 9.	95	
Acajutla	Pacific Steam Navigation Co.	July 9.	July 9.		7
Laura C. Hall	Pacific Metals Transp. Co., Ltd.	July 10.	July 13.	11	62
Ecuador	Pacific Mail Steamship Co.	July 11.	July 12.	30	1
Manavi	Pacific Steam Navigation Co.	July 13.	July 13.	11	
Delrosa	U. S. Shipping Board	July 13.	July 14.	208	
Baja California	A. O. Lindvig	July 17.	July 18.	70	
Alvarado	Pacific Steam Navigation Co.	July 18.	July 18.		6
Trophon	Anglo-Saxon Petroleum Co.	July 18.	July 20.	5,058	
Santa Ana	Pacific Mail Steamship Co.	July 20.	July 21.	2,099	12
Mineola	Grace Line	July 20.	July 21.	150	
Jamaica	Pacific Steam Navigation Co.	July 21.	July 21.		2
Palena	South American Line	July 21.	July 22.	55	
Seiyo Maru	Toyo Kisen Kaisha	July 22.		1,047	

Narcotic Drugs Import and Export Act.

The following is the text of the Narcotic Drugs Import and Export Act of the Congress of the United States. It applies to the Canal Zone.

[PUBLIC NO. 227—67TH CONGRESS.] [H. R. 2193.]

AN ACT To amend the Act entitled "An Act to prohibit the importation and use of opium for other than medicinal purposes," approved February 9, 1909, as amended.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That sections 1 and 2 of the Act entitled "An Act to prohibit the importation and the use of opium for other than medicinal purposes," approved February 9, 1909, as amended, are amended to read as follows:

"That when used in this Act:

"(a) The term 'narcotic drug' means opium, coca leaves, cocaine, or any salt, derivative, or preparation of opium, coca leaves, or cocaine;

"(b) The term 'United States,' when used in a geographical sense, includes the several States and Territories, and the District of Columbia;

"(c) The term 'board' means the Federal Narcotics Control Board established by section 2 of this Act; and

"(d) The term 'person' means individual, partnership, corporation, or association.

"SEC. 2. (a) That there is hereby established a board to be known as the 'Federal Narcotics Control Board' and to be composed of the Secretary of State, the Secretary of the Treasury, and the Secretary of Commerce. Except as otherwise provided in this Act or by other law, the administration of this Act is vested in the Department of the Treasury.

"(b) That it is unlawful to import or bring any narcotic drug into the United States or any territory under its control or jurisdiction; except that such amounts of crude opium and coca leaves as the board finds to be necessary to provide for medical and legitimate uses only, may be imported and brought into the United States or such territory under such regulations as the board shall prescribe. All narcotic drugs imported under such regulations shall be subject to the duties which are now or may hereafter be imposed upon such drugs when imported.

"(c) That if any person fraudulently or knowingly imports or brings any narcotic drug into the United States or any territory under its control or jurisdiction, contrary to law, or assists in so doing, or receives, conceals, buys, sells, or in any manner facilitates the transportation, concealment, or sale of any such narcotic drug after being imported or brought in, knowing the same to have been imported contrary to law, such person shall upon conviction be fined not more than \$5,000 and imprisoned for not more than 10 years.

"(d) Any narcotic drug imported or brought into the United States or any territory under its control or jurisdiction, contrary to law, shall (1) if smoking opium or opium prepared for smoking, be seized and summarily forfeited to the United States Government without the necessity of instituting forfeiture proceedings of any character; or (2), if any other narcotic drug, be seized and forfeited to the United States Government, without regard to its value, in the manner provided by sections 3075 and 3076 of the Revised Statutes, or the provisions of law hereafter enacted which are amendatory of, or in substitution for, such sections. Any narcotic drug which is forfeited in a proceeding for condemnation or not claimed under such sections, or which is summarily forfeited as provided in this subdivision, shall be placed in the custody of the board and in its discretion be destroyed or delivered to some agency of the United States Government for use for medical or scientific purposes.

"(e) Any alien who at any time after his entry is convicted under subdivision (c) shall, upon the termination of the imprisonment imposed by the court upon such conviction and upon warrant issued by the Secretary of Labor, be taken into custody and deported in accordance with the provisions of sections 19 and 20 of the Act of February 5, 1917, entitled 'An Act to regulate the immigration of aliens to, and the residence of aliens in the United States,' or provisions of law hereafter enacted which are amendatory of, or in substitution for, such sections.

"(f) Whenever on trial for a violation of subdivision (c) the defendant is shown to have or to have had possession of the narcotic drug, such possession shall be deemed sufficient evidence to authorize conviction, unless the defendant explains the possession to the satisfaction of the jury.

"(g) The master of any vessel or other water craft, or a person in charge of a railroad car or other vehicle, shall not be liable under subdivision (c), if he satisfies the jury that he had no knowledge of and used due diligence to prevent the presence of the narcotic drug in or on such vessel, water craft, railroad car, or other vehicle; but the narcotic drug shall be seized, forfeited, and disposed of as provided in subdivision (d)."

SEC. 2. That sections 5 and 6 of such Act of February 9, 1909, as amended, are amended to read as follows:

"Sec. 5. That no smoking opium or opium prepared for smoking shall be admitted into the United States or into any territory under its control or jurisdiction for transportation to another country, or be transferred or transshipped from one vessel to another vessel within any waters of the United States for immediate exportation or for any other purpose; and except with the approval of the board, no other narcotic drug may be so admitted, transferred, or transshipped.

"Sec. 6. (a) That it shall be unlawful for any person subject to the jurisdiction of the United States Government to export or cause to be exported from the United States, or from territory under its control or jurisdiction, or from countries in which the United States exercises extraterritorial jurisdiction, any narcotic drug to any other country: *Provided*, That narcotic drugs (except smoking opium and opium prepared for smoking, the exportation of which is hereby absolutely prohibited) may be exported to a country only which has ratified and become a party to the convention and final protocol between the United States Government and other powers for the suppression of the abuses of opium and other drugs, commonly known as the International Opium Convention of 1912, and then only if (1) such country has instituted

and maintains, in conformity with that convention, a system, which the board deems adequate, of permits or licenses for the control of imports of such narcotic drugs; (2) the narcotic drug is consigned to an authorized permittee; and (3) there is furnished to the board proof deemed adequate by it, that the narcotic drug is to be applied exclusively to medical and legitimate uses within the country to which exported, that it will not be reexported from such country, and that there is an actual shortage of and a demand for the narcotic drug for medical and legitimate uses within such country.

"(b) The Secretary of State shall request all foreign Governments to communicate through the diplomatic channels copies of the laws and regulations promulgated in their respective countries which prohibit or regulate the importation and shipment in transit of any narcotic drug and, when received, advise the board thereof.

"(c) The board shall make and publish all proper regulations to carry into effect the authority vested in it by this Act."

SEC. 3. That section 8 of such Act of February 9, 1909, as amended, is amended to read as follows:

"Sec. 8. (a) That a narcotic drug that is found upon a vessel arriving at a port of the United States or territory under its control or jurisdiction and is not shown upon the vessel's manifest, or that is landed from any such vessel without a permit first obtained from the collector of customs for that purpose, shall be seized, forfeited, and disposed of in the manner provided in subdivision (d) of section 2, and the master of the vessel shall be liable (1) if the narcotic drug is smoking opium, to a penalty of \$25 an ounce, and (2) if any other narcotic drug, to a penalty equal to the value of the narcotic drug.

"(b) Such penalty shall constitute a lien upon the vessel which may be enforced by proceedings by libel *in rem*. Clearance of the vessel from a port of the United States may be withheld until the penalty is paid, or until there is deposited with the collector of customs at the port, a bond in a penal sum double the amount of the penalty, with sureties approved by the collector, and conditioned on the payment of the penalty (or so much thereof as is not remitted by the Secretary of the Treasury) of all costs and other expenses to the Government in proceedings for the recovery of the penalty, in case the master's application for remission of the penalty is denied in whole or in part by the Secretary of the Treasury.

"(c) The provisions of law for the mitigation and remission of penalties and forfeitures incurred for violations of the customs laws, shall apply to penalties incurred for a violation of the provisions of this section."

SEC. 4. That such Act of February 9, 1909, as amended, is amended by adding at the end thereof a new section to read as follows:

"Sec. 9. That this Act may be cited as the 'Narcotic Drugs Import and Export Act.'"

Approved, May 26, 1922.

Automobiles for Australia.

In the 5,911 tons of cargo carried through the Canal on the steamer *Canadian Victor*, July 22, bound from Montreal to New Zealand and Australia, were 2,470 tons of automobiles.

In June the steamship *Sussex* carried 1,000 tons of automobiles from New York to Australia, and the steamship *Karouga* 800 tons from New York to Australia.

Official Circulars.

Sales of Material.

THE PANAMA CANAL,
EXECUTIVE OFFICE,

BALBOA HEIGHTS, C. Z., July 13, 1922.

CIRCULAR NO. 630-8 (superseding all Circulars of the 630 series):

1. The Supply Department will handle all sales of material, supplies, and equipment for The Panama Canal and the Panama Railroad on the Isthmus, unless otherwise specifically authorized by the Governor.

2. All sales shall be made on a cash basis. Certified checks, bonds, and other securities or cash credits with The Panama Canal and Panama Railroad may be utilized as guaranty of pay-

ment in amounts and under conditions satisfactory to the Chief Quartermaster and the Auditor.

3. Sales from regular stock of material, supplies, and equipment which can be spared, may be made to the following, under conditions stated:

(a) To other departments of the United States Government on the basis of stock card values plus the surcharge specified in prevailing published tariff.

(b) To employees of The Panama Canal, Panama Railroad Company, and other Departments of the United States Government for their personal use only; clubs, societies and other organizations of such employees; and to charitable and religious institutions located on the Canal Zone, when such material, supplies, or equipment are not carried in Panama Canal Com-

missaries on the basis of stock card values plus the surcharge specified in prevailing published tariff. When such social, fraternal, charitable, or religious organizations are located in territory under the jurisdiction of the Republic of Panama, sales to same shall be subject to the customs laws and regulations of the Republic of Panama.

(c) To steamship companies and their authorized agents for use on ships clearing for or arriving from a foreign port (other than Panamanian ports); and to individuals and companies when the articles purchased are for use solely outside of the territorial limits of the Canal Zone and the Republic of Panama; without customs duty requirements; on the basis of stock card values plus the surcharge specified in prevailing published tariff.

(d) To contractors with The Panama Canal and Panama Railroad under conditions stated in their contracts.

(e) To all others not heretofore specified; subject to the customs laws and regulations of the Republic of Panama, on the basis of stock card values plus the surcharge specified in prevailing published tariff.

(f) Scrap, obsolete material, supplies and equipment, and second hand material, supplies, and equipment carried at appraised prices will be sold without surcharge.

4. Delivery of all articles will be made f. o. b. the nearest storehouse where material is actually located, or on the spot in case of material located in the field, unless otherwise specifically agreed upon. Purchasers must arrange for transportation and agree to accept delivery and remove material at the time of sale, or within an agreed period of time thereafter. Supplies to shipping may be sold f. a. s.

5. Surplus and obsolete material and equipment, after having been regularly surveyed and appraised, may be sold at prices approved by the Governor without surcharge. The General Storekeeper is authorized to effect the sale of such articles at a discount of not more than 25 per cent of the appraised value where the appraised value of the articles to be sold at such discount does not exceed \$500. Such sales at a discount where the appraised value of the articles exceeds \$100 should be made only in case of emergency and all such sales must be reported to the Governor at the end of each month for his approval. Articles appraised at less than \$100 and on hand in the Obsolete Storehouse more than 3 months, may be sold for not less than 50 per cent of the appraised value in the discretion of the General Storekeeper.

6. Public property which has been condemned, or the sale price of which has been reduced as the result of a survey or inspection, will not be purchased by any official who was responsible therefor at the time of the condemnation or reduction in price, nor by any official who bore any part in any such condemnation or reduction.

7. All materials, supplies and equipment requiring appraisal of value for transfer to the Supply Department for sale, and transfer between Departments and Divisions of The Panama Canal and Panama Railroad, or to other Departments of the Government, shall be promptly appraised by a Board of Appraisal consisting of:

(a) The Surveying Officer.

(b) A representative of the Mechanical Division designated with the approval of the Governor.

(c) A member of the Board of Local Inspectors designated by the Chairman of the Board shall act as a member of this board whenever any floating equipment is to be appraised.

(d) The Constructing Quartermaster of the Supply Department will act as a member whenever any buildings are to be appraised.

This Board shall report to the Chief Quartermaster and shall function so as to facilitate the sale or disposition of property in the most expeditious manner.

8. Delivery of material, supplies, and equipment subject to customs duties in the Republic of Panama will not be made to the purchaser until he shall have presented to the storehouse making sale a copy of bill covering sale on which

are indorsed certificates signed by the Treasurer of the Republic of Panama, or his authorized representative, in Panama or Colon, that customs duties on such material, supplies, and equipment have been paid or have been remitted.

9. If the value of sales in any case, except sales to shipping, exceeds \$2,500, prior authority from the Governor must be obtained. All sales, except to shipping, in excess of \$250, made without prior authority, shall be reported monthly to the Governor.

JAY J. MORROW,
Governor.

Acting Captain of the Port, Cristobal.

THE PANAMA CANAL,
DEPT. OF OPERATION AND MAINTENANCE,
BALBOA HEIGHTS, C. Z., July 13, 1922.

To all concerned—During the absence on leave of Commander F. V. McNair, U. S. N., Assistant Port Captain H. L. Eden will act as Captain of the Port, Cristobal, and member of the Board of Local Inspectors, The Panama Canal, effective this date.

E. P. JESSOP,
Marine Superintendent.

Approved:
JAY J. MORROW,
Governor.

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton; but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;

(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

26.05 Enging

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AUG 21 1922

THE PANAMA CANAL RECORD

OFFICIAL PUBLICATION OF THE PANAMA CANAL.

PUBLISHED WEEKLY.

Subscription rates, domestic, \$1.50 per year; foreign, \$2.00; address
The Panama Canal Record, Balboa Heights, Canal Zone, or
The Panama Canal, Washington, D. C.

Entered as second-class matter February 6, 1918, at the Post Office
at Cristobal, C. Z., under the Act of March 3, 1879.



Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical information and is required for the proper transaction of the public business.

Volume XV. Balboa Heights, C. Z., August 2, 1922.

No. 51.

Texas Company's Tanker "Shenandoah" Makes Local Record for Quick Discharge of Cargo.

A record for quick discharge of a cargo of fuel oil by a tanker at the plants at the terminals of The Panama Canal was established at the most recent delivery of the tanker *Shenandoah*. The *Shenandoah* started pumping at the oil dock at Cristobal at 11 o'clock at night on July 18, and at 5 p. m. on the 19th was ready to go to sea, having discharged 61,366.66 barrels in 18 hours. This was at the average rate of 3,409 $\frac{1}{4}$ barrels per hour. During the night hours the ship was discharging approximately 5,500 barrels an hour, but in the morning it was necessary to disconnect from one of the pipe lines so that it might be used by the plant in bunkering a ship; except for this the *Shenandoah* would probably have completed discharge by 1 o'clock.

The *Shenandoah* is owned and operated by the Texas Company, and had brought a shipment of oil from Puerto Lobos, Mexico, for delivery to the company's tanks at Cristobal.

Addition to Pacific Mail Coastwise Service.

The Pacific Mail Steamship Co. is establishing a new fast freight service by adding 4 cargo vessels of approximately 9,000 deadweight tons capacity each to its New York and San Francisco line, in which 3 combination passenger and cargo vessels are engaged at present. In addition to the calls at Los Angeles and San Francisco, now made by the passenger ships, the cargo ships will also call at Portland, Tacoma, and Seattle. They will omit the calls at Corinto, La Libertad, San Jose, and Manzanillo, made by the passenger ships.

With the addition of the cargo ships, the Pacific Mail will have sailings in the coastwise service every 10 days for freight and every 21 days for passengers.

The first of the 4 cargo vessels to make the transit of the Canal will be the *Santa Malta*, due from New York August 14. The 3 other ships to be added to the service are the *Santa Clara*, *Santa Olivia*, and *Santa Paula*. The passenger vessels now in the New York-San Francisco service are the *Colombia*, *Ecuador*, and *Venezuela*.

Information from American Consuls.

The Consular officers of the United States at seaports all over the world are *ex officio* representatives of The Panama Canal for the purpose of furnishing information to shipping and allied interests as to conditions, charges, etc., at the Panama Canal affecting the operation of ships. The current publications of The Panama Canal of interest to shipping are furnished to the Consular officers and filed for reference.

It is not desired that inquiries of a general nature be addressed to the Consular officers, or that they be burdened with requests which should be made direct to The Panama Canal; but ships' operators who may not be sufficiently advised as to charges, supplies, facilities, etc., at the Canal will often save time by applying to the nearest American Consul.

MOVEMENTS OF OCEAN VESSELS.
Week ending at midnight, July 20, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship.	Arrived at port.		Entered Canal.		Completed transit.		Cleared for sea.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Esmeralda	22	11 56	23	6 15	23	13 46	23	15 51	British	Pacific Steam Navigation Co.	450.0	57.0	24.3	New York	Valparaiso	General	2,535	9,009	6,117
Dakota	23	2 35	23	7 48	23	14 48	23	15 54	American	American-Hawaiian Line.	407.7	53.7	25.0	New York	Los Angeles	General	4,000	7,156	5,058
Berengar	23	18 59	24	6 30	24	13 43	24	15 03	British	Oaklin Steamship Co.	399.6	53.7	24.10	Barry	San Francisco	Coal	6,840	6,403	4,620
Cowee	24	6 22	24	7 30	24	14 43	24	17 24	American	Fred J. Gammlett	253.0	43.0	16.0	Baltimore	San Francisco	General	134	2,940	1,959
Buller	24	12 17	24	12 30	24	19 02	24	21 15	Swedish	Transatlantic Steamship Co.	425.0	57.0	26.6	New York	Los Angeles	General	8,635	7,614	5,384
Willpelo	24	13 10	24	13 10	24	20 16	24	21 26	American	Williams Steamship Co.	386.8	52.2	23.0	New York	Seattle	General	5,951	5,680	4,112
Manavi	24	16 17	25	6 05	25	13 39	25	17 53	British	Pacific Steam Navigation Co.	216.0	35.1	12.6	Cristobal	Guayaquil	General	160	1,357	884
Centurion	25	7 57	25	8 35	25	15 30	25	17 18	British	Harrison Line.	400.0	52.0	23.6	Liverpool	General	6,000	5,738	4,161	
Hertford	25	9 12	25	9 35	25	17 38	25	19 10	British	Federal Steam Navigation Co.	520.0	61.0	30.6	New York	Brisbane	General	9,635	12,384	8,683
Santa Maria	25	18 45	26	6 45	26	14 22	26	15 41	British	Santa Maria Steamship Co.	460.0	60.3	28.0	Tampico	Toopilla	Fuel oil	10,500	8,746	5,079
Yone Maru	25	23 33	26	7 42	26	15 03	26	16 29	Japanese.	Kokusai Kisen Kaisha.	425.0	53.0	24.0	New York	Yokohama.	General	6,317	6,823	5,186
Irene S. Wilkin- son	25	18 07	26	9 15	26	16 49	29	15 50	American	Howard Lumber Co.	187.3	38.0	14.0	Port Arthur.	San Miguel Bay	General	625	866	730
Argosy	26	8 10	26	10 30	26	17 37	27	12 35	American	Wessel Duval & Co. (S. B.).	399.0	54.0	18.0	Philadelphia.	Pimental.	General.	2,276	6,203	4,307
Ansilio San Giorgio II	25	20 22	26	11 00	26	18 16	27	18 40	Italian.	Soc. Naz. di Navigazione.	378.0	51.6	17.0	Genoa.	Valparaiso.	General	1,984	5,902	4,287
Padena	22	15 07	27	6 16	27	14 02	27	15 25	Chilean.	Chilean Line	350.0	42.1	23.0	Cristobal.	Valparaiso.	General	720	3,666	2,577
Laura C. Hall	26	13 55	27	6 25	27	13 52	28	17 53	British.	Pacific Metals Corp	81.0	25.6	9.0	Cristobal.	Buenaventura.	General	9	132	72
Culbre	26	14 30	27	7 25	27	15 01	27	16 00	American.	Ore Shipping Co.	450.0	57.0	18.0	Baltimore.	Cruz Grande.	Ballast	7,897	4,829	3,592
Ausir	26	22 04	27	8 30	27	15 49	27	17 20	German.	Roland Line.	407.0	54.6	21.10	Hamburg.	Guayaquil.	General	4.16	6,542	4,532
Andrea F. Luckenbach. President Sur- miento	27	3 06	27	9 15	27	17 01	27	18 05	American	Luckenbach Line	496.0	68.0	25.0	Philadelphia.	Los Angeles.	General.	7,021	11,487	8,732
O-199	26	18 44	27	10 35	27	18 12	27	19 05	Argentine	Argentine Government.	266.0	42.5	18.6	New York	Balboa.	General	2,064	8,033	7,611
Tiger	4-14	10 10	27	8 45	27	17 05	27	18 05	American	U. S. Navy.	175.0	16.3	13.11	Cristobal	Balboa.	General	1,800	7,611	5,450
Balboa	27	13 23	28	6 30	28	14 00	28	15 08	American	Standard Transportation Co	410.0	56.0	22.0	Boston	Los Angeles	General and steel	5,500	8,243	6,312
U. S. Grant	27	20 40	28	10 05	28	17 40	29	18 45	Swedish	Johnson Line	440.0	56.0	25.2	Stockholm	San Francisco	General	7,753	7,480	5,533
Cauca	27	7 03	28	13 05	28	20 34	28	21 42	British	U. S. Army	490.0	55.0	28.0	New York	San Francisco	General	2,534	1,589	1,018
Sirius	24	15 45	28	13 05	28	21 30	28	22 05	American	Pacific Steam Navigation Co	246.0	35.0	14.10	Cristobal	Buenaventura	Ballast	2,064	8,033	7,611
Anniston City.	27	7 55	29	6 35	29	14 09	29	16 20	American	U. S. Navy	401.0	54.0	21.8	Hampton R'ds	San Diego	General	8,033	7,611	5,450
Proctor	28	11 25	29	7 35	29	14 38	29	15 50	American	U. S. Steel Products Co	424.2	56.2	26.0	New York	Los Angeles	General, steel	1,800	7,611	5,450
Lompe	29	8 12	29	9 20	29	17 05	30	19 20	British	U. S. Navy	401.0	54.0	17.6	New Orleans	Mare Island	General	9,600	7,496	5,311
Amplandia.	29	30 39	10 20	29	17 36	30	19 20	British	C. T. Bowring & Co.	412.0	53.8	25.8	Tampico	Antofagasta	Fuel oil	7,449	6,242	4,320	
San Juan	25	13 38	29	12 16	29	19 09	29	21 55	American	Anglo-Saxon Petroleum Co.	283.0	37.0	17.10	Cristobal	Shanghai	Kerosene	7,449	6,242	4,320
Epsom	29	9 25	29	13 00	29	19 38	29	21 30	British	Pacific Mail Steamship Co.	370.0	50.0	18.0	Norfolk.	San Francisco	General	1,884	2,379	1,593
										Watts, Watts & Co.	370.0	50.0	18.0	Norfolk.	Toopilla	Ballast	4,945	3,468	2,493
Motor ship.									Motor schooner.	Training ship.									U. S. Navy supply ship.
								</											

1 Motor ship.

2 Schooner.

3 Motor schooner.

4 Training ship.

5 Submarine.

6 U. S. Army transport.

7 U. S. Navy supply ship.

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Cumberland.	22	18	00	23	7	00	23	14	22	23	14	29	British	Federal Steam Navigation Co.	520	0	64	2	28	4	Sydney	London	General wool	10,100	12,167	8,345
Lobos	23	3	30	23	8	09	23	15	56	24	15	50	British	Pacific Steam Navigation Co.	405	6	54	2	27	7	Colonel	London	General	7,883	7,151	4,796
American	23	7	00	23	8	09	23	16	18	24	16	30	American	American Hawaiian Line	406	8	51	1	24	0	Seattle	Boston	General lumber	3,545	5,988	4,225
Ocean Prince.	23	8	00	23	9	52	23	17	15	24	18	30	British	Furness Withly & Co.	406	8	52	0	25	6	Portland	Glasgow	General	7,300	5,926	4,252
Ansulo San	22	19	00	23	11	50	23	20	40	25	18	08	Italian	National Navigation Co.	380	0	49	0	24	6	Valparaiso	Genoa	General	6,417	5,864	4,205
Argatas	23	20	45	24	7	55	24	15	04	24	15	04	American	U. S. Shipping Board	390	0	54	2	23	0	Portland	Philadelphia	General lumber	6,319	6,204	4,314
Cauca	23	3	00	24	8	35	24	15	45	28	13	05	British	Pacific Steam Navigation Co.	246	0	35	3	16	2	Champerico	Cristobal	General	1,005	1,580	1,018
Santa Elisa	24	6	00	24	8	53	24	16	35	24	20	32	American	Grace Line	300	3	51	7	23	1	Talcahuano	New York	General	4,251	5,957	4,325
F. H. Hillman.	24	7	00	24	10	30	24	18	21	24	18	20	American	Standard Oil Co.	500	0	68	2	27	10	San Francisco	Philadelphia	Gasoline	13,974	11,225	7,913
Huallaga	24	9	50	24	11	34	24	19	05				Peruvian	Peruvian Line	300	0	44	7	21	6	Mollendo	Cristobal	General	1,609	4,514	2,386
Largo Law.	24	12	25	24	14	45	24	22	21	24	22	21	British	Thomas Law & Co.	379	6	50	5	25	6	Calcutta Buena	Alexandria	Nitrate	6,343	5,323	3,839
San Juan.	24	14	35	25	6	48	25	13	38	29	12	16	American	Pacific Mail Steamship Co.	283	0	37	0	15	0	San Francisco	Cristobal	General	650	2,379	1,593
William A. Mc-	24	17	25	25	7	50	25	16	45	25	14	45	American	Growth & Thurlow	305	0	55	1	25	10	San Pedro	Boston	General	5,992	6,532	4,528
Kenny	24	23	45	25	8	12	25	16	15	25	23	10	British	F. and W. Ritson	400	4	51	2	23	0	San Antonio	Liverpool	General	6,300	5,208	3,578
Hazel Branch	25	10	30	25	11	20	25	18	00	27	11	05	American	U. S. Army	448	0	58	0	23	0	San Francisco	Brooklyn	General	8,925		
Cambrai	25	12	50	25	13	24	25	20	54	26	8	33	British	Standard Transport Co.	390	0	52	1	15	0	Moji Japan	New York	Ballast	5,301	3,663	
Aponeit.	25	11	00	26	6	46	26	13	55	27	6	25	British	Pacific Metals Corp	81	0	25	6	9	0	Buenaventura	Cristobal	Coffee	59	132	72
Laurea C. Hall	26	10	35	27	7	05	27	14	05	27	21	20	American	Dollar Line	429	0	55	2	24	6	Manila	New York	General lumber	6,142	7,584	5,538
Stuart C. Hall	26	17	30	27	7	49	27	14	20	27	15	15	American	Lockenbath Line	425	0	57	3	23	6	Portland	Boston	General	5,500	8,568	6,705
Bogart F. Jack-	26	19	25	27	8	49	27	15	43	27	15	45	British	New Zealand Shipping Co.	449	0	58	0	23	0	Ardraide	New York	General	3,005	8,256	5,470
enbach	27	11	00	27	12	06	27	19	36	28	8	00	Japanese	Toyo Kisen Kaisha	400	0	53	0	26	0	Iloilo	New York	Sugar	7,530	6,187	4,541
Okaki	28	3	00	28	7								Chinese	South American Steamship Co.	336	8	41	2	21	0	Valparaiso	Cristobal	General	230	3,296	2,155
Wwoyo Maru.	28	4	45	28	9	07	28	17	10	29	13	05	British	Pacific Steam Navigation Co.	385	0	56	0	23	10	Punta Arenas	Liverpool	General	3,881	8,620	5,945
Oriana	28	2	00	28	10	12	28	17	20	29	19	35	American	U. S. Shipping Board	385	0	51	0	18	2	San Francisco	New York	General	1,500	5,945	4,561
Easterner.	28	6	45	28	10	25	28	17	50	30	10	13	British	Pacific Mail Steamship Co.	225	0	35	9	15	9	Guayaquil	Cristobal	General	838	1,213	692
Salvador.	28	5	41	28	14	22	28	21	27	30	6	00	American	Pacific Mail Steamship Co.	280	0	48	7	20	8	San Francisco	New York	General	2,442	6,015	4,281
Colombia.	28	13	55	28	14	34	28	23	05	29	11	20	British	Commonwealth Government.	376	1	52	0	20	Suva	London	Copra, wheat.	4,800	4,718	3,359	
Australford	28	7	00	29	6	43	29	13	58	29	13	58	American	U. S. Army	409	6	54	2	18	10	Honolulu	New York	Army supplies.	4,200	7,485	5,748
El Eden.	28	23	00	29	7	45	29	15	22	29	15	22	American	Standard Transport Co.	408	3	62	7	22	0	Beaumont	New York	Kerosene oil	5,900	10,084	7,426
India Arrow.	29	8	00	29	9	52	29	16	37	29	16	37	American	Standard Transport Co.	408	3	62	7	21	9	Shanghai	Beaumont	Kerosene oil	7,800	9,941	6,946
Yankee Arrow.	29	8	00	29	10	22	29	18	17	29	23	08	American	Grace Line	404	6	54	0	24	0	Portland	Boston	General lumber	5,577	6,789	4,746
Santa Barbara.	29	8	00	29	10	22	29	18	17	29	23	08	American	Grace Line	404	6	54	0	24	0	Portland	Boston	General lumber	5,577	6,789	4,746

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 23.	Turrialba.	United Fruit Co.	New Orleans via Habana.	July 23.	Conde de Churrucua.	Soc. Com. de Oriental.	Tampico.
July 23.	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.	July 24.	Turrialba.	United Fruit Co.	Bomas del Toro.
July 24.	Cartago.	United Fruit Co.	New Orleans.	July 25.	Berlin.	T. Nilsen.	Nuevitas.
July 25.	Calamaries.	United Fruit Co.	New York via Habana.	July 26.	Calamaries.	United Fruit Co.	Port Limon.

(Continued on page 640, column 2.)

*DEPARTTRES.

*ARRIVALS.

Origin and Destination of Cargo During Past Fiscal Year.

The tonnage of cargo passing through the Canal during the fiscal year 1922 (10,884,910) was equivalent to 93.8 per cent of the tonnage of the previous year (11,599,172).

The greatest shrinkage was in the trade with the west coast of South America. Exports from the Atlantic and Gulf ports of the United States to that region fell from 933,261 to 244,514 tons. European exports to South America declined only from 297,166 to 283,804 tons. Exports from South America through the Canal to the United States were 548,609 tons, as compared with 975,597 in 1921, and to Europe 663,127, as compared with 922,499.

Combining imports and exports and Europe and the United States, this South American trade was less by 1,388,469 tons, and to this may be added a difference of 398,097 tons in crude oil shipments from Mexico to South America, or a total of 1,786,566.

This was due to market conditions. Prices have been so low and demand so slack that the West Coast countries have found it impossible to market their raw materials at a profit and shipments have been greatly curtailed.

The trade with Australasia has also fallen off. Exports from the United States to Australasia declined from 620,428 to 288,090, and exports from Europe from 391,848 to 359,895. Shipments from Australasia to the United States fell from 147,877 to 45,957, and to Europe from 579,745 to 381,538. The total loss of tonnage in the Australasian trade amounted to 664,418. In this case, too, economic conditions are in the main responsible, but there was also some diversion of traffic from Panama to competing routes.

Exports from the United States to the Far East increased from 1,213,906 to 1,728,172 tons. Imports from the Far East fell from 428,044 to 303,315. The combined movement showed a gain of 389,537 tons.

The most remarkable gains of the year were in the movements of cargo to and from the Pacific coast of North America, particularly the latter.

Exports from the west coast of the United States to Europe were 1,302,183 tons, as compared with 1,154,840 in 1921, and from western Canada to Europe 420,272, as compared with 154,513. The whole west coast of North America should be treated as a unit in dealing with these figures, as most vessels in the trade load and discharge cargo at both American and Canadian ports. The combined increase amounted to 413,102 tons. Canadian imports from Europe increased from 20,416 to 149,553, and American imports from 144,591 to 186,696. The combined gain was 171,242 tons.

Cargo moving from east to west in the United States coastwise trade increased from 698,429 to 1,288,075 tons, and cargo moving from west to east from 673,959 to 1,274,452 tons. The total gain in this trade for both directions has been 1,190,139 tons, equivalent to 86.7 per cent. This rapid development of the coastwise trade is the most conspicuous feature of the year's business. It has compensated for losses elsewhere, and maintained the total volume of traffic at nearly the same level as in 1921.

There has also been an increase in the trade between the west coast of Canada and the east coast of the United States, but a comparison

can not be made, as exact statistics for 1921 are not available. In 1922 the westbound cargo on this route amounted to 88,408 tons, and the eastbound to 159,921 tons.

Notice to Mariners.—Menaces to Navigation.

THE PANAMA CANAL, EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 31, 1922.

1. From master of steamship *San Juan*:

Steamship *San Juan* passed Bona Island 5 miles off, July 30, 2.30 a. m., L. A. T. Light not burning. Note—This light will be fixed within next day or two.

Steamship *San Juan* passed log 35 feet long, 4 feet in diameter, with branches sticking up, in Lat. 7° 13' North, Long. 80° 20' West, 11 a. m., L. A. T., July 30. Menace to navigation.

2. From U. S. A. T. *Eldena*:

(8 a. m., July 30.) Lat. 11° 36' North, Long. 78° 38' West, Wind NE-E 4, weather overcast equally. barometer 29.95, air 79, sea rough. (4 p. m., July 30), Lat. 12° 31' North, Long. 78° 12' West, Wind E-NE 5, weather hazy, air 86, barometer 29.80, sea rough.

JAY J. MORROW,
Governor.

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended July 29:

Steamships *Seiyo Maru*, straighten and repair broken davit stanchion and rail; *Rosana*, face off joints on 12 valves; manufacture 24 copper gaskets per sample.

PREVIOUSLY REPORTED.

Dredge *Paraiso*, work for widening hull is going along; in addition miscellaneous running repairs to hull and engines.

The following vessels were at the Cristobal shops for repairs during the week ended July 31:

Steamship *Cauca*, renew packing in drain valve for M. P. engine; repair ash hoist, ballast pump link motion, and sea suction valve, refrigerator suction pipe, exhaust pipe for forward winch and starboard boiler safety valves and seats; overhaul engine room telegraph and repair and adjust wire and chain leads; patch top of fidley; re-rubber ports; calk forward well deck; repair galley stove and rebrick, etc.; tug *Favorite*, weld brake band and make lever for towing machine; steamships *Solana*, remove broken propeller blade and fit spare blade; braze copper pipe for dynamo engine; *Salvador*, repair 1 heater coil and manufacture 4 new ones as sample; *Cristobal*, fit new shroud plates on 2 eccentric straps; renew 1 length of ice machine circulating water pipe; weld broken bracket on lifting gear for skylight, etc.; *Heredia*, manufacture piston ring for circulating pump; *Acajulla*, make deck over captain's room water-tight and make sun deck portable; clear scuppers and fit new rose plates; repair connecting link on wheel of patent log; manufacture 4 new coils for fuel oil heaters; machine valve face for circulating pump and fit false face, etc.; subchasers *Nos. 3 and 4*, dock, clean, and scrape bottom; repair copper sheathing; remove propellers, tail shaft, struts, strainers, etc.; plug all holes below water line and cover with copper sheathing; cut out bulkheads as directed; steamships *Huallaga*, *Metapan*, *Australford*, launches *Renown* and *Naos*, minor repairs.

Facilities for Shipping.

The Panama Canal is equipped with all the facilities for the fueling, supply, and repair of ships which are found in modern ports.

The coaling plants, with an aggregate storage capacity of 700,000 tons, bunker ships at the rate of from 100 to 500 tons an hour, practically as fast as the nature of the vessel will allow. Oil can be delivered as fast as the ships can take it, from 30 tanks aggregating approximately 1,500,000 barrels of storage capacity. Crude fuel oil, Diesel oil, and gasoline are sold.

The ships' chandlery storehouses carry a wide variety of marine supplies and spare parts. The commissary stores sell foodstuffs, fresh meats, fruits, and vegetables, as well as clothing and a general line of goods for supplying about 30,000 people resident on the Isthmus. Ice plants, a large laundry, hotels, hospitals, and restaurants serve the passengers and crews of ships.

A salvage service operated by the Canal is available for prompt assistance to vessels within a radius of a thousand miles of the Canal, or farther if required. Seagoing tugs or a wrecking tug with requisite equipment are dispatched on short notice.

A 1,000-foot dry dock, capable of receiving the largest ships built, a smaller dry dock, floating cranes, foundry, and amply equipped shops, employing about 1,100 men, provide the means of making practically any kind of marine repairs.

In general, the services to shipping at the Canal are such as have been developed and found ample and effective, in the course of handling large traffic through the Canal in over 7 years of operation.

Official Circulars.

Appointment.

THE PANAMA CANAL,
EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 24, 1922.
CIRCULAR No. 661-105:

Effective this date, Mr. Wilson H. Kromer is appointed Assistant Auditor on the Isthmus, *vice* Mr. Elwyn Greene, appointed Auditor, June 20, 1922.

JAY J. MORROW,
Governor.

Prohibition of Payment of Increased Salaries.

THE PANAMA CANAL,
EXECUTIVE OFFICE,
BALBOA HEIGHTS, C. Z., July 29, 1922.

To all concerned—The Act of Congress, approved June 30, 1922, making appropriations for the Panama Canal for the fiscal year 1923, contains the following prohibition against the payment of increased salary for any position over that which was in effect for such position on June 30, 1921:

"No part of the foregoing appropriations for the Panama Canal shall be used to pay the salary for any position at a rate in excess of the rate in effect for such position on June 30, 1921."

The following rules construing the section of law referred to above have been observed in passing upon the cases affected:

"1. Where the work of two or more positions has been combined since June 30, 1921, so as to place a substantial portion of the work on one position, the salary that may be paid is limited by the highest salary of any of the positions combined.

"2. Where an employee is transferred from one department, division, or bureau to another, together with a substantial portion of the work attached to such employee's position, the salary rate may be transferred with the position.

"3. Mere increase of work does not constitute authority for change of designation of the position or increase of salary.

"4. To constitute an emergency justifying the creation of a new position at a higher rate of salary than was authorized on June 30, 1921, there must be some condition involving a change of more than mere increase of routine duties, and in such cases a full and complete memorandum of all of the facts should be in the files to serve as the basis of a report to the General Accounting Office should such increase be questioned by the Accounting Officers in Washington."

Each employee reduced as the result of the provisions of the law will be furnished a copy of this circular, together with a copy of the General Order on which his name appears.

It is not intended that any employee shall suffer a reduction in pay by misinterpretation of the law and if grounds are found to be proper under the law for restoring the pay in any cases after this office has had an opportunity to review them, the change will be made retroactive to July 1, 1922.

In administering the provisions of law cited above, Panama Railroad employees will be accorded the same treatment as employees carried on Panama Canal rolls.

JAY J. MORROW,
Governor.

Postal Addresses of The Panama Canal.

The postal address is, "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

MOVEMENTS OF OCEAN VESSELS.—Continued from page 637.

PORT OF CRISTOBAL—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 23	Metapan	United Fruit Co.	New York via Kingston.	July 27	Cartago	United Fruit Co.	New Orleans via Tela and Habana.
July 25	Tivives	United Fruit Co.	Colombian ports.	July 27	Metapan	United Fruit Co.	Colombian ports.
July 27	Turrialba	United Fruit Co.	Bocas del Toro.	July 27	Tivives	United Fruit Co.	New York via Kingston.
July 28	Venezuela	United Fruit Co.	Amsterdam via wayports.	July 28	Turrialba	United Fruit Co.	New Orleans.
July 28	Cristobal	Royal Netherlands W. I. Mail.	Puerto Barrios.	July 28	Eupatoria	Hanburg-American Line	Cartagena.
July 28	Solana	Panama Railroad Steamship Line	Norfolk.	July 28	Venezuela	Royal Netherlands W. I. Mail.	Port Limon.
July 29	Andillon	Pacific Mail Steamship Co.	Tampico.	July 29	Gen. W. C. Gorgas.	Panama Railroad Steamship Line.	New York via Haiti.
			Liverpool via wayports.	July 29	Guarde Costa No. 2.	Colombian Government.	Cartagena.
PORT OF BALBOA.							
July 22	Seiyo Maru	Toyo Kisen Kaisha.	Hongkong.	July 24	Seiyo Maru	Toyo Kisen Kaisha.	Valparaiso.
July 23	Rosana	A. Fatt	Punta Arenas, C. R.	July 28	Rosana	A. Fatt	Punta Arenas, C. R.
July 25	Anyo Maru	Toyo Kisen Kaisha.	Valparaiso.	July 25	Anyo Maru	Toyo Kisen Kaisha.	Honkong.
July 25	Regulus	A. O. Lindvig.	San Antonio.	July 27	Regulus	A. O. Lindvig.	Los Angeles.
July 25	Depere	U. S. Shipping Board.	Valparaiso.	July 28	Depere	U. S. Shipping Board.	San Francisco.
				July 26	Sinaloa	A. O. Lindvig.	San Francisco.

*Other than ships passing through the Canal.

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The Panama Canal, Washington, D. C.

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Certificate.—By direction of the Governor of The Panama Canal the matter contained herein is published as statistical
information and is required for the proper transaction of the public business.

Volume XV. Balboa Heights, C. Z., August 9, 1922.

No. 52.

Canceling Special Prices for Coal in Large Quantities.

THE PANAMA CANAL, EXECUTIVE DEPARTMENT,
BALBOA HEIGHTS, C. Z., August 5, 1922.

To all concerned—Effective August 16, 1922, special prices for coal taken in large quantities, as specified in paragraph 11, item 21, of Panama Canal Tariff No. 6, will be canceled.

These special prices were established at less than actual cost for the purpose of offering inducements for the purchase of large quantities of coal in order to reduce the quantity of stock on the Isthmus. Due to shortage of coal at Atlantic ports of the United States, it is not considered advisable to continue these reduced prices, although regular prices are still maintained at former figures, which are approximately cost figures to the Panama Railroad Company for handling such coal.

JAY J. MORROW,
Governor.

Canal Traffic for July, 1922.

A total of 251 ocean-going commercial vessels transited the Canal during the month of July, 1922. Tolls on these vessels aggregated \$1,094,127.42 as compared with \$933,290.42 for 228 vessels in the preceding month and \$804,503.11 tolls for 206 vessels in the month of July last year.

In addition to the above commercial traffic, transit was made by 2 small launches, on which tolls of \$5.25 were paid, and 14 U. S. Government vessels passed through the Canal free of tolls.

The increase in tolls over the month of June was due, entirely, to the increased volume of traffic from Pacific to Atlantic ports as the Atlantic to Pacific traffic was slightly under that of the preceding month.

Shipments of wheat and sugar were chiefly responsible for the increased Pacific to Atlantic traffic; 14 full cargoes of wheat passed through the Canal bound from the west coast of the United States and Canada to European ports and 4 cargoes of sugar made the transit, en route from the Philippines to the east coast of the United States, while additional shipments of both commodities helped to make up the loading of a number of vessels transiting the Canal during the month with mixed cargoes.

Visit of Japanese Training Squadron.

The training squadron of the naval school of the Japanese Navy, consisting of the cruisers *Asama*, *Idzumo*, and *Iwate*, with a total personnel of 2,412, in command of Vice Admiral *Tanaguchi*, arrived at Balboa in the morning of August 5. On August 7 the squadron passed through the Canal to Cristobal, where it will lie until August 11, when it will clear for South American ports. The squadron will visit the centennial exposition at Rio de Janeiro.

MOVEMENTS OF OCEAN VESSELS.

Week ending at midnight, August 5, 1922.

THROUGH THE CANAL—ATLANTIC TO PACIFIC.

Ship	Arrived at port.		Entered Canal.		Completed transit.		Nationality.	Line.	Length.	Beam.	Salt water draft.	From—	For—	Cargo.		Panama Canal tonnage.	
	Day.	Hour.	Day.	Hour.	Day.	Hour.								Nature.	Tons.	Gross.	Net.
Hartsman	29	18	18	30	6	40	30	15	26			Immingham.	San Francisco	General	6,600	9,256	6,534
Ares	30	10	18	30	7	40	30	15	05	31	1	25	Guayaquil	General	1,850	4,385	3,195
Kronstad	30	11	00	31	1	33	30	19	10			Norfolk.	Tocopilla.	Ballast	2,948	2,901	
Skjensaa	30	17	00	31	6	28	31	14	00	31	15	25	Fusan.	General	6,600	5,218	3,741
City of Reno	30	17	05	31	7	35	31	15	00	31	16	10					
Maipo Maru	30	9	23	31	7	35	31	15	00	31	16	10	Vancouver.	General	760	7,940	6,068
Mississippi	30	9	23	31	7	35	31	15	00	31	16	10	Los Angeles	Ballast	6,606	4,530	
Mayagash	30	21	55	31	9	24	31	16	36	31	18	12	Portland	General	7,014	8,567	6,020
Maui	31	7	55	31	12	40	31	19	35	31	20	53					
Australind	31	15	57	1	2	35	1	15	45			New York.	Yokohama.	General	7,425	8,012	5,749
Calad	31	20	58	1	8	00	1	15	25	1	18	00	Brisbane	General	1,400	5,503	3,992
Myrian	31	15	30	1	8	00	1	17	36	1	19	00	Pisagua.	Oil	8,000	6,437	4,442
River Trent.	1	17	14	1	9	55	1	18	40			Port Arthur.	Shanghai	Oil	9,000	7,178	5,072
Huachuca	24	19	05	1	11	08	1	19	09	1	20	15	Mobile.	Calleo.	5,074	3,986	2,955
Imperial	28	14	15	1	11	24	1	19	15	2	1	58	Guayaquil	Coke and coal	619	4,514	2,583
Pharos	1	13	04	1	13	15	1	20	14	1	21	45	Cristobal	General	279	3,206	2,156
G. Harrison	1	13	30	1	6	25	2	20	55	3	2	50	Seattle	General	4,080	4,147	3,250
Santa Teresa	1	15	57	2	7	52	2	14	34	3	2	50	Puerto Lobos.	Crude oil	18,500	15,476	11,102
Orari	1	18	03	2	9	10	2	21	16	3	1	10	Talcahuano	(¹)	3,318	5,726	4,083
Port Campbell	2	9	40	2	11	03	2	21	03	2	22	20	Liverpool	General	7,500	9,827	6,895
Steel Scientist	2	12	30	2	11	40	2	21	32	2	23	05	Glasgow	General	3,282	10,712	7,904
Rio Gaton	1	16	12	3	6	20	3	13	32	4	16	40	Baltimore.	Steel products.	8,577	7,611	5,454
Argonne	2	12	30	3	6	20	3	13	32	4	16	40	Cristobal	Naval stores.	341		8
Satsuma	2	12	30	3	6	20	3	13	32	4	16	40	San Diego.	Naval stores.	341		8
Tenore	2	12	30	3	6	20	3	13	32	4	16	40	Manila	General	7,557	5,370	3,810
Beldore	2	12	30	3	6	20	3	13	32	4	16	40	New York	General	8,000	9,046	6,115
Reijo Maru	3	23	45	3	8	05	3	17	20	3	17	52	Auckland	General	15,476	1,102	
Gold Harbor	3	6	20	3	11	05	3	18	18	3	21	25	Cruz Grande.	Ballast	5,697	6,310	4,598
Almaco	3	5	03	4	6	32	4	13	39	4	14	50	Hamburg.	(²)	2,853	6,157	4,313
Lena Lucken-	3	54	5	4	7	25	4	13	41	4	16	00	Philadelphia.	General	124	2,878	1,714
beck	4	6	42	4	8	50	4	15	55	4	17	00	New York.	General	6,432	7,917	5,295
Knight Templar	4	8	40	4	10	30	4	16	53	4	17	00	Boston.	General	4,822	8,130	5,388
Recondo	5	3	37	5	6	30	5	14	24	5	15	25	Shanghai	General	4,059	4,119	3,290
Acsulua	7-30/13	40	5	7	31	5	14	59	5	23	20		Seattle	General	727	1,273	706
												Cristobal.	Champerico.	General			

* Launch.

* U. S. Navy transport.

* Machinery, railroad material, cotton goods, cement, structural material, and general.

* Cotton, oil, steel, and general.

* Steel, cotton, and general.

Cowboy
Covena.
Henry D.
Whiton.

5 10 05
5 8 10
5 7 17

5 18 25
5 22 04
5 21 05

5 16 56
5 20 45
5 19 55

5 10 15
5 12 43
5 13 18

THROUGH THE CANAL—PACIFIC TO ATLANTIC.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 30.	Calamares.	United Fruit Co.	Port Linon.	July 30.	Calamares.	United Fruit Co.	New York via Habana.
July 31.	Arenas.	United Fruit Co.	New Orleans via Habana.	July 31.	Solana.	Pacific Mail Steamship Co.	Tampico.
July 31.	Heredia.	United Fruit Co.	New Orleans.	July 31.	Atenas.	United Fruit Co.	Bocas del Toro.

* Submarine.

Hours are expressed on the 24-hour basis and all hours greater than 12 are postmeridian.

PORT OF CRISTOBAL.

*ARRIVALS.

*DEPARTURES.

Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 30.	Calamares.	United Fruit Co.	Port Linon.	July 30.	Calamares.	United Fruit Co.	New York via Habana.
July 31.	Arenas.	United Fruit Co.	New Orleans via Habana.	July 31.	Solana.	Pacific Mail Steamship Co.	Tampico.
July 31.	Heredia.	United Fruit Co.	New Orleans.	July 31.	Atenas.	United Fruit Co.	Bocas del Toro.

(Continued on page 648, column 2.)

Increasing Facilities for Oil and Gasoline Storage.

The West India Oil Co. has leased an additional lot in the oil tank farm at Balboa, the Pacific terminus of the Canal, for the erection of a tank of 50,000 barrels capacity for the storage of gasoline.

The United States Navy has leased 3 lots at Balboa and 3 at Cristobal, for six 50,000-barrel fuel oil tanks, and the work of grading the sites and preparing the foundations for the erection of the tanks is in progress.

With the new tanks, the storage capacity of the terminals will be: Fuel oil, 35 tanks, 1,726,041 barrels; Diesel oil, 2 tanks, 59,992 barrels; gasoline, 3 tanks, 60,786 barrels. The total tanks in service will be 40, with an aggregate capacity of 1,846,819 barrels.

Not including the new tanks, which are not yet in service, the tanks now in use at the two terminals for fuel and Diesel oil are as follows:

Owner.	Cristobal.		Balboa.		Total both terminals.	
	No. of tanks.	Aggregate storage.	No. of tanks.	Aggregate storage.	No. of tanks.	Aggregate storage.
The Panama Canal.....	5	251,612	5	199,781	10	451,393
Asiatic Petroleum Storage Corp. (Limited), Panama.....	2	110,872	2	110,584	4	221,456
West India Oil Co.....	2	110,000	2	84,946	4	194,946
Union Oil Co. of California.....			4	149,078	4	149,078
Huasteca Petroleum Co.....	3	167,581			3	167,581
The Texas Co.....	2	111,515			2	111,515
Arrow Oil Co.....	2	110,000			2	110,000
United Fruit Co.....	1	55,000			1	55,000
Panama Agencies Co.....			1	25,064	1	25,064
Totals.....	17	916,580	14	569,453	31	1,486,033

* Includes 1 tank of 55,954 barrels used for storage of Diesel oil.

* Includes 1 tank of 4,038 barrels used for storage of Diesel oil.

Gasoline storage, in addition to the above, is provided by The Panama Canal with a tank of 5,382 barrels (226,028 gallons) at Cristobal, and a tank of 5,404 barrels (226,976) gallons at Balboa.

The Asiatic Petroleum Storage Corporation (Limited), Panama, has taken over the 4 tanks formerly owned and operated by the Panama Canal Storage Corporation. The Arrow Oil Co. has taken over the Pacific Mail Steamship Co.'s 55,000-barrel tank at Cristobal.

Record Shipment of Crude Oil Through Canal.

The British steamer *G. Harrison Smith*, bound from Puerto Lobos, Mexico, to Antofagasta, Chile, passed through the Canal on August 1, 1922, carrying 132,000 barrels of crude oil, or approximately 18,500 tons. This is the largest shipment of oil to have passed through the Canal to date.

The *G. Harrison Smith* is owned and operated by the International Petroleum Company. She is a vessel of 15,371 tons gross and 9,326 tons net, 550½ feet in length by 72 feet beam. At the time of transit through the Canal her draft was 32 feet 9 inches.

Damaged Oil Being Returned from Orient.

The steamers *Indian Arrow* and *Yankee Arrow* of the Standard Oil Co., carrying respectively 7,900 and 5,200 tons of refined oils, transited the Canal on July 29, bound to Beaumont, Tex., from Chinese ports. Both vessels were carrying cargoes of refined oils which had be-

come discolored and damaged to such an extent that it was necessary that they be again put through the refining process.

The *Indian Arrow* had last previously passed through the Canal on April 24, 1922, carrying 10,982 tons of refined oil to Taku Bar, and the *Yankee Arrow* on May 3, 1922, carrying 11,031 tons of refined oils to Woosung.

Tariff No. 6.

The Panama Canal has issued "Tariff No. 6—Schedule of Rates for Supplies and Services Furnished to Shipping and Allied Interests at the Panama Canal," superseding Panama Canal Tariff No. 5 and all supplements thereto. Tariff No. 6 is in effect July 1, 1922.

The items listed in the index are as follows:

Ashes, handling; baggage allowance; bakery products; barges (*see* Lighters); basin charge; berth, shifting; bills of health; bills, payment of; cablegrams advising deposits; chandlery, ship; coal; cold storage; collections, agency fee; compressed air, cordage; cramage; craneboats; cranes; customs fees; deck hands; Diesel oil; dispensaries; divers; dry docks; electric current; fire extinguishers, recharging; floating cranes; fruits; fuel oil; garbage; general; groceries; guards, quarantine; guards, rat; handling lines; health, bills of; holiday and Sunday work; hospital treatment; hotels; ice; launches; laundry; lighters; locks, handling lines in; lubricants; measurement of vessels; meats; medical supplies; medical treatment; moorings to buoys; oil; overtime; Panama Railroad passenger tariff; pangas; physicians; pilotage; provisions and supplies; pumping oil; quarantine; rat guards; repairs; shifting berth; ship chandlery and stores; special Sunday and holiday rates; special trains; stevedoring and transferring cargo; storage on piers; Sunday and holiday work; supplies; switching; telephones; Tivoli Hotel; tolls; trains, special; transferring cargo; tugs and supply boats; vegetables; Washington Hotel; water, whaleboats; wharfage, wrecking cranes; wrecking operations; launches.

Copies of the tariff are furnished without charge to steamship lines and related interests. They are also placed in the offices of American Consular officers, along with other general information about the Panama Canal.

Supplement No. 1 to Tariff No. 6.

THE PANAMA CANAL, PANAMA RAILROAD COMPANY,
EXECUTIVE OFFICE, BALBOA HEIGHTS, C. Z., July 18, 1922.

ITEM 3.—PILOTAGE.

(Effective August 1, 1922.)

5. Port pilotage applies to vessels visiting terminal ports without transiting the Canal; and also to vessels which, in addition to transiting the Canal, stop at either terminal and there receive or discharge passengers or freight. All vessels, including vessels transiting the Canal, using a port in the Canal Zone as a terminus for the discharge of freight or passengers or for the receipt of freight or passengers will be charged port pilotage both on entering and leaving the port. Vessels transiting the Canal and using the port at either end of the Canal solely for the purpose of securing repairs, fuel, or supplies, or for the purpose of allowing through passengers to land or transit the Isthmus by train, will be charged pilotage only for entering the port prior to transiting the Canal, and for leaving the port after having transited the Canal. No charge for pilotage will be made against a vessel solely on account of its acceptance or delivery of mails originating in or destined for the Canal Zone or the Republic of Panama.

ITEM 14.—WHARFAGE.

(Effective August 1, 1922.)

6. The foregoing charges for wharfage will be made against vessels handling cargo or passengers either at Cristobal or Balboa as a terminus. All other vessels docking at a wharf owned or controlled by The Panama Canal or the Panama Railroad Company for any other purpose than for handling cargo

or passengers as a terminus, will be charged one-half the foregoing rates, except, that no wharfage will be charged for vessels docking at the Coaling Plant solely for the purpose of securing coal.

When a vessel receives or discharges at the Coaling Plant, either at Cristobal or Balboa, one or more tons of cargo, or 10 or more bags of mail, or 3 or more passengers, a charge for wharfage will be made at the regular rates provided in this tariff.

ITEM 15.—MOORING TO BUOYS.

(Effective August 1, 1922.)

3. Vessels will be permitted to handle cargo and passengers at mooring buoys, at the discretion of the Receiving and Forwarding Agent.

ITEM 18.—STEVEDORING AND TRANSFERRING CARGO.

(Effective August 1, 1922.)

1. Stevedoring:

(a) General cargo.....	per ton..	\$0.30
(b) Cotton, wool, kapok, hemp, bark, leather, hides, and similar commodities, per ton of 2,000 lbs..		.60
If offered on measurement basis, rate will be the general cargo rate.		
(c) Boilers, locomotive parts, machinery, railroad cars, etc., scrap machinery and scrap boilers, etc., and other heavy weights of over 2 tons.....	per ton..	.50
(d) Structural iron over 35 feet long.....	per ton..	.50
(e) Loose brick, conduit, sewer pipe, terra cotta, and tile.....	per ton..	.50
(f) Loose scrap iron of irregular shape, pieces not over 2 tons.....	per ton..	.60
(g) Lumber, switch and cross ties.....	per M feet B. M..	1.00
(h) Rough timber and logs.....	per ton..	.60
(i) Piling.....	per linear foot..	.014
(j) Horses, mules, and donkeys.....	per head..	1.00
(k) Cattle.....	per head..	.75
(l) Calves, goats, dogs, hogs, and sheep.....	per head..	.50
(m) Live stock, other than above indicated when crated.....	per ton..	1.00
(n) Mail, baggage, and specie.....	per ton..	1.50
(o) Explosives.....	per ton..	2.50
(p) Nitrates.....	per ton..	.50

2. Transferring cargo between ships:

(c) Mail, baggage, and specie.....	per ton..	3.00
(NOTE—When actual weight of mail or baggage (including container) is not shown on ship's papers, ordinary mail (letters and prints) will be handled at an average weight of 40 pounds per sack, parcel post mail at an average of 100 pounds and baggage at 75 pounds per piece.)		
(i) Live animals other than the above, when crated.....	per ton..	2.00
Live animals in transit will not be received before the connecting steamer has berthed unless the delivering carrier has made arrangements for their care, pending the arrival of connecting steamer.		

3. Isthmian cargo:

(b) Cargo for Colon—(third paragraph): Arrangement for delivery in cars must be made prior to commencement of discharge of cargo, otherwise, a charge will be made for rehandling.....	per ton..	.75
(d) The minimum charges specified in paragraph (e) will also apply on cargo transported from Balboa to Panama.		
(f) By prior arrangements, inward and outward local shipments may be received and delivered at Balboa docks, when, in the opinion of the Receiving and Forwarding Agent, such procedure seems desirable.		

14. For use of electric winches or industrial trucks, including operators, per hour.. 1.25

16. No change in routing shown on bills of lading will be recognized or followed after check books and papers have been compared by the forces of the Receiving and Forwarding Agent, covering cargo to be discharged at the Atlantic or Pacific terminals. If delivering carriers desire to change routing on such cargo, it will be necessary for them to request the Receiving and Forwarding Agent, in writing, prior to commencement of discharge to make such changes if they desire to avoid rehandling charges. In the event such deviation from the original routing necessitates rehandling of the cargo, a charge of 75 cents per bill of lading ton will be made against the delivering carrier. Instructions of the delivering carrier as to the routing of cargo will be followed only in connection with shipments covered by bills of lading in which no reference whatever is made to the name of the final carrier.

17. Orders for outward cargo must be presented by receiving carriers in writing between 7 a. m. and 4 p. m., at least 6 hours prior to the time ship is ready to receive cargo, in order that there may be ample time to properly prepare papers and cargo check books. Cargo will be delivered or

received from vessels in port during the following working periods, which will not be deviated from except at the discretion of the Receiving and Forwarding Agent in cases of emergency: 7 a. m. to 11 a. m., 12 noon to 4 p. m., and from 5 p. m. to 1 a. m.

JAY J. MORROW,
Governor, *The Panama Canal.*
President, *Panama Railroad Company.*

Prices of Fuel Oil and Diesel Oil.

The Union Oil Company of California advises that its current prices for fuel oil and Diesel oil at representative Pacific ports of the United States are as follows:

Stations.	Fuel oil.	Diesel oil.
	Per barrel.	Per gallon.
Seattle.....	\$1.38	\$0.04225
San Francisco.....	1.08	.03375
Oleum Refinery, San Francisco Bay.....	1.00	.03125
Los Angeles—San Pedro.....	1.00	.03125
San Diego.....	1.15	.....
Honolulu.....	1.65	.04625

Ships at Canal Repair Shops.

The following vessels and marine equipment were at the Balboa shops for repairs during the week ended August 5:

Steamship *Pennsylvanian*, dry-dock ship for repairs to propeller; change 4 broken and bent propeller blades, using spares aboard ship; renew 8 studs; repack stern tube gland; braze steam pipe for winch; weld leaky rivets and calk seams on stern frame; motor ship *Alsace*, furnish services of diver to cut rope off of propeller and tail shaft, and to repack gland; Colombian coast guard cutter No. 3, remove machinery; hoist boat on dock for general repairs to hull, machinery, and deck houses; U. S. submarine *O-16*, dry-dock, clean, and paint; change main motors; install new mufflers, furnished; overhaul C. and R. air compressors; overhaul all ventilation; remove hydroplane and install larger bowplanes; make annual repairs to hull and machinery; and put 10 pounds air pressure on all compartments to test for leaks.

The following vessels were at the Cristobal shops for repairs during the week ended August 7:

Steamship *Venezuela*, manufacture connecting rod; repair pipes in galley, ice box, overflow tank; and copper pipe on main steam line to winches; roll tubes, calk seams and rivets; weld air duct tubes, etc., in boilers; repack superheaters; make smoke boxes air-tight, etc.; U. S. S. *O-15*, renew 2 forward plates on side of superstructure with fittings complete; remove hydroplanes; clean and paint underwater hull; grind-in all valves; make minor structural repairs; take stern tube and strut bearing clearances and repack stern tube glands; calibrate all gauges; repair ballast pump, water-tight doors in bulkhead frame and battery vent ducts; clean, paint, and test all ballast, trimming, and fuel tanks; install standard air salvage system, recognition signal ejector, indicators on all ventilating valves, and larger bow planes, etc.; U. S. Army tanker No. 1, repair steam steering gear, hand steering gear, steering wheel, dynamo engines, ice machine, and main engine crosshead brasses, and hatches, etc.; steamships *Cauca*, repair ballast pump; feed pump, windlass, and refrigerator engine; *Advance*, repair Nos. 1 and 2 winches; manufacture and install new brasses in anchor windlass; repair plumbing, fireroom tools, and hand pump from No. 2 tank, etc.; *Conde de Churruca*, *Mantaro*, *Stuyvesant*, *Puerto Rico*, *Cold Harbor*, *Panama*, *Advance*, and gunboat *Bravo*, minor repairs.

Postal and Cable Addresses of The Panama Canal.

The postal address is "The Panama Canal, Balboa Heights, Canal Zone," or "The Panama Canal, Washington, D. C."

Mail for ships passing through the Canal or touching at either of the terminal ports should be addressed to "Cristobal, Canal Zone."

The cable address of The Panama Canal, on the Isthmus, is "Pancanal, Panama;" in the United States, "Pancanal, Washington."

Current Net Prices on Fuel Oil, Diesel Oil, and Coal.

Crude fuel oil is delivered to vessels at either Cristobal or Balboa for \$1.70 per barrel of 42 gallons.

Diesel oil is sold at \$3.50 per barrel.

Coal is supplied to steamships, including warships of all nations, delivered and trimmed in bunkers at \$12 per ton of 2,240 pounds at Cristobal and \$15 at Balboa. For ships in transit through the Canal, which are directed to take coal at Balboa, for the convenience of The Panama Canal, \$12 per ton at Balboa. When coal is delivered from lighters in quantities of 50 tons or more, the price is \$13 per ton at Cristobal, \$16 at Balboa. For delivering lump coal for galley use, in sacks, \$12 additional per ton; but if vessel furnishes sacks, \$5 per ton additional.

For coal in large quantities, as specified below, taken from alongside coaling plants:

(a) To vessels taking 1,200 tons or over;

(b) To vessels taking between 825 and 1,200 tons and bunkering full;

(c) To vessels taking 825 or more tons and more than quantity required to bunker full;

Price to the above three classes, per ton of 2,240 pounds, \$10 at Cristobal, \$13 at Balboa.

(d) To vessels taking between 688 tons and 825 tons and bunkering full, the charge will be for 825 tons at prices specified in paragraph (c).

(e) To vessels requiring 825 tons to 1,200 tons to bunker full and taking less than quantity required to bunker full, the maximum charge for the coal taken will be the quantity required to bunker full at prices specified in paragraph (c).

(f) If all or any part not less than 50 tons of the lots authorized to be sold at the coaling plant at the reduced prices named above, is delivered in lighters, the additional charge for such coal delivered in lighters will be, per ton of 2,240 pounds, \$1.

(g) If less than 50 tons are delivered in lighters, paragraph 4 of Supplement No. 11 to Tariff No. 5 will apply (\$15 at Cristobal, \$18 at Balboa).

(h) The Cristobal rates will apply to coal for vessels transiting the Canal, taken at Balboa by direction of The Panama Canal.

Coal for cargo is sold only by special authority of the Governor, at prices quoted upon application.

For trimming on deck, between decks, or special trimming in bunkers for convenience of vessel, when requested, an additional charge of 90 cents per ton will be made for extra handling.

These prices will be canceled, effective August 16, 1922.

Publication of Notices and Circulars of Interest to Shipping.

All of the Panama Canal notices to mariners, notices to steamship lines and general circulars of interest to shipping in its relation to the Canal are published in THE PANAMA CANAL RECORD. For this reason it is considered unnecessary to make a separate general distribution, away from the Isthmus, of such notices and circulars to those receiving THE PANAMA CANAL RECORD. Shipping interests are advised to look for them in this paper, which is supplied to them without charge.

Trips Through the Canal.

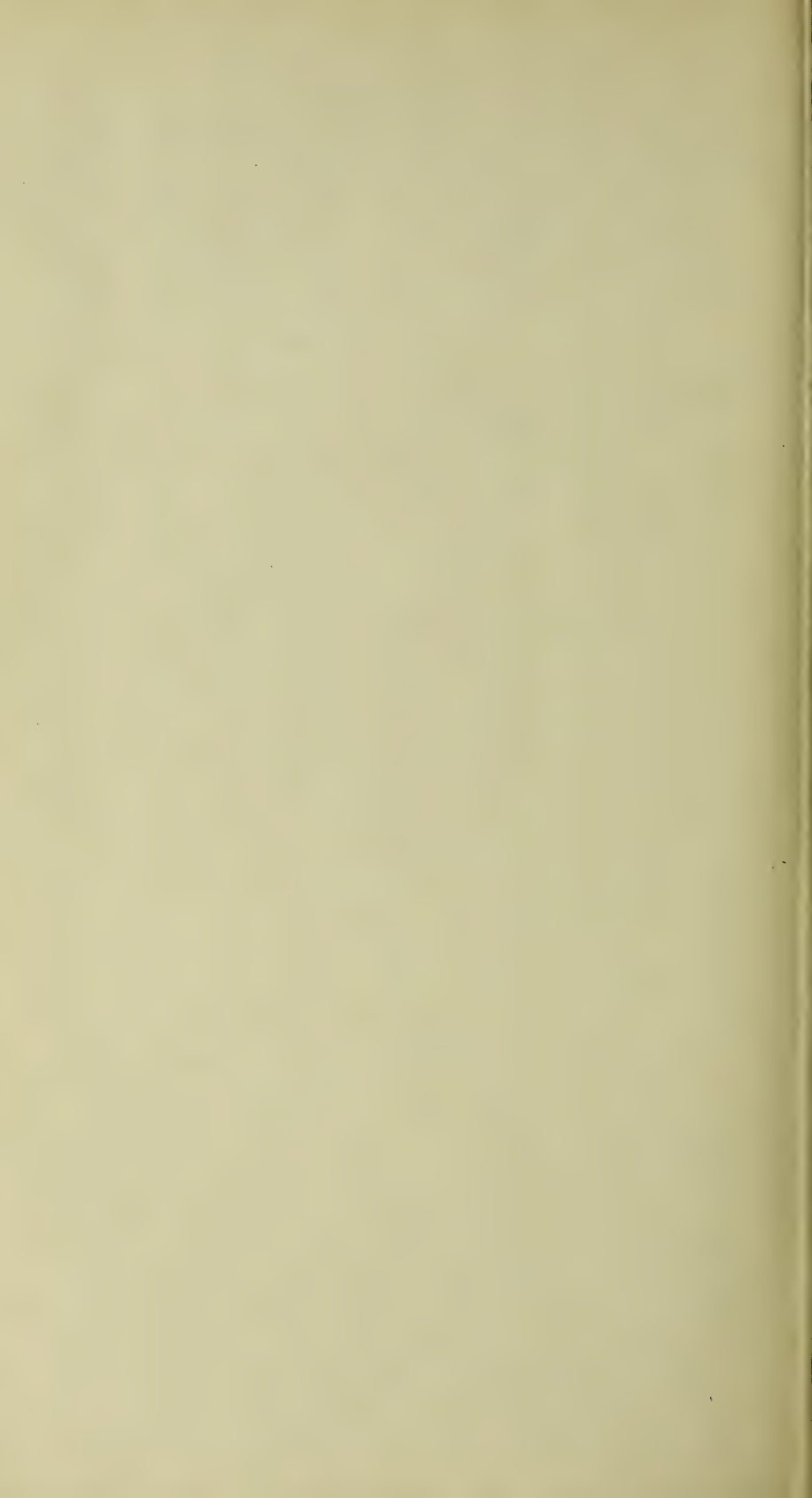
The following lines operating passenger vessels through the Canal carry local passengers from one terminal to the other: Pacific Mail Steamship Company, Pacific Steam Navigation Company, Grace Line, South American Steamship Company (Chilean Line). The Pacific Mail charges \$6 for the trip, the others \$10. The several services together afford about 5 transits of the Canal each way every week.

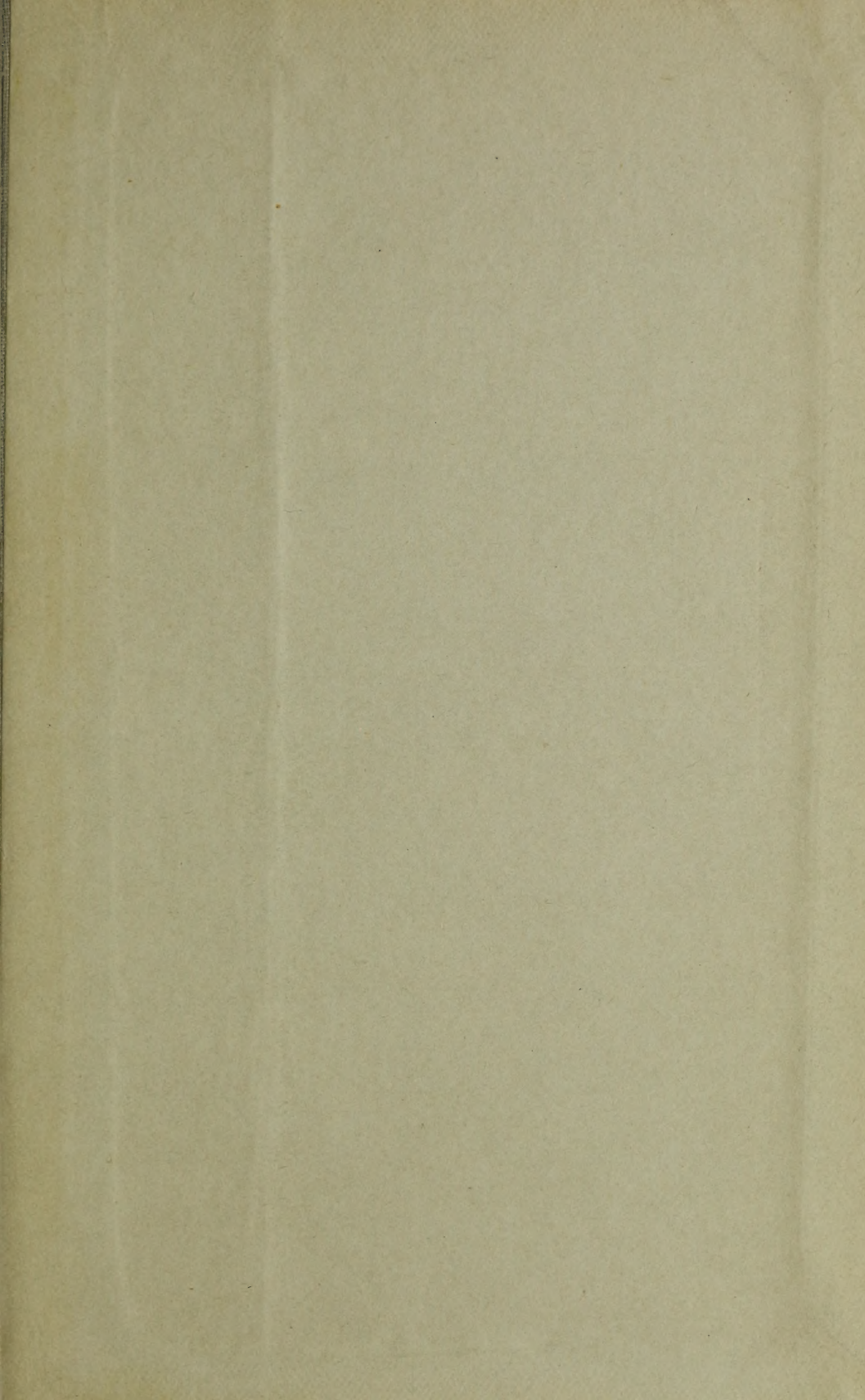
MOVEMENTS OF OCEAN VESSELS.—Continued from page 643.

PORT OF CRISTOBAL.—continued.

*ARRIVALS.				*DEPARTURES.			
Date.	Vessel.	Line.	From—	Date.	Vessel.	Line.	For—
July 31.	Venezuela	Royal Netherlands W. I. Mail.	Port Limon.	August 1.	Venezuela	Royal Netherlands W. I. Mail.	Amsterdam via wayports.
July 31.	Puerto Rico	French Line.	St. Nazaire and wayports.	August 1.	Antillan	Leyland Line.	New Orleans.
August 1.	Pastores	United Fruit Co.	New York via Habana.	August 2.	Pastores	United Fruit Co.	Port Limon.
August 2.	Panama	Panama Railroad Steamship Line	New York via Haiti.	August 3.	Atenas	United Fruit Co.	New Orleans.
August 2.	Sixola	United Fruit Co.	New York via Kingston.	August 3.	Heredia	United Fruit Co.	New Orleans and wayports.
August 3.	Metapan	United Fruit Co.	Colombian ports.	August 3.	Sixola	United Fruit Co.	Colombian ports.
August 3.	Bravo	United Fruit Co.	Bocas del Toro.	August 3.	Metapan	United Fruit Co.	New York and Kingston.
August 4.	Cochula ^s	Mexican Government	Vera Cruz.	August 3.	Cristobal	Panama Railroad Steamship Line.	Norfolk.
August 4.	William Green	Pan-American Pet. Transp. Co.	Vera Cruz.	August 3.	Puerto Rico	French Line.	St. Nazaire and wayports.
August 5.	Canden	United Fruit Tanker Corp.	Tampico.				
August 5.	Galveston ^s	United States Navy	Key West.				
* Gunboat. * Transport.				PORT OF BALBOA.			
July 31.	Onaka	Standard Transport Co.	Shanghai.	July 31.	Onaka	Standard Transport Co.	Tallal.
August 1.	Meriden	General Steamship Corp.	Iquique.				

* Other than ships passing through the Canal.





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